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MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"ALIS VOLAT PROPRIIS."

Vol. IV. JANUARY, 1897. No. 1.

Original Contributions.

A NEW METHOD OF TREATING STRICTURE OF THE RECTUM.

BY JOSEPH B. BACON, M. D.,
CHICAGO.

I published a new method for treating strictures of the rectum in the QUARTERLY of January, 1895. That method consisted of a plastic operation, using the sigmoid flexure to form a new channel around the strictured portion of the canal, and is a sure means of relieving all non-malignant strictures of the rectum that are located above the levator ani muscles. But for that class of strictures (and unfortunately the most common) that are located just above the internal sphincter ani, no plastic operation can be done that will give fecal continence afterward. These strictures have been unsuccessfully treated for ages by various methods, such as gradual dilatation with bougies, forcible divulsion, internal and complete proctotomy, and later by means of electrolysis. These strictures can not be dissected out and the ends of the bowel united without leaving a circular cicatrix that will reform another stricture of the gut.

Complete proctotomy gives temporary relief by severing the stricture band, but the wound soon fills up with granulation tissue that reforms fibrous tissue and the stricture is worse than before operation was done. Then, again, in making the com-

plete proctotomy the sphincter muscles are severed, and often do not unite perfectly, and incontinence results.

The method I have successfully tried does not interfere with the sphincter muscles, yet accomplishes permanently, as far as I can judge from some of my cases, what complete proctotomy only does temporarily. The wound made by a complete proctotomy, viz., when an incision is made, beginning with the rectum and cutting through the stricture band back to the coccyx and sphincter muscles, is the shape of a letter V after the ends of the stricture retract, as shown in Fig. 1.

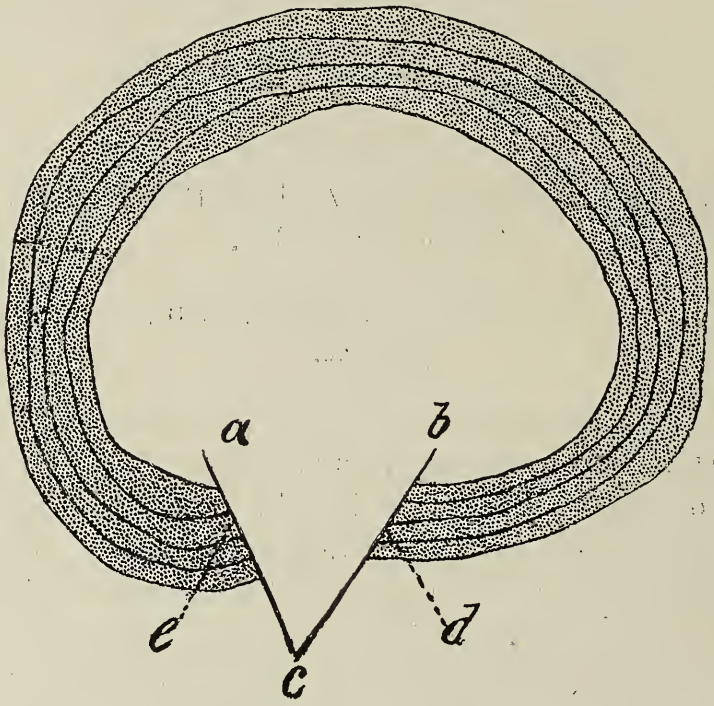

FIG. 1.—*c*, Limit of incision at coccyx; *e*, *d*, represent the retracted ends of the severed stricture; *a*, *c*, *b*, represent the triangular wound that must fill up with new tissue that will again unite the stricture bands at *e* and *d*.

If we can prevent this triangle from filling up with fibrous tissue, the severed stricture band must disappear by absorption.

In order to accomplish this I produce a mucous fistula between the stricture and the coccyx, so that after the proctotomy is made the mucous tract will be at the bottom of the wound and prevent the union of the severed stricture bands, as seen in Fig. 2.

The operation is simple and quickly done, and practically free from danger. The patient having been thoroughly anesthetized,

I take a blunt-pointed aneurismal needle, threaded with a very heavy silk ligature, and at a point just above the internal sphincter on the posterior rectal wall in the median line puncture the gut and carry the needle point well back into the perirectal tissue to the coccyx, and up behind the stricture above the upper limits, when the needle is forced through the rectal wall into the rectum. The ligature is now seized with a blunt hook or dressing forceps, and one end drawn down through the stricture opening and the needle withdrawn. The two ends of the seton are now securely tied, and left hanging outside of the anus. The loop of thread is

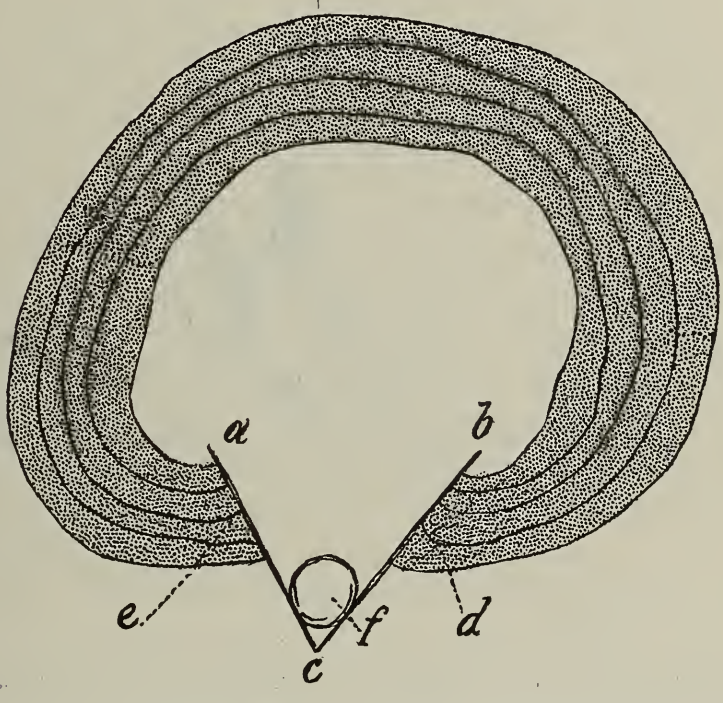

FIG. 2.—*a*, *b*, *c*, Representing incision with retracted ends of stricture; *c*, coccyx; *f*, mucous fistula at bottom of wound.

left long so as to avoid severing the stricture, as it is necessary to have the seton in place for about three months to get a continuous mucous tract. There is practically no pain following the operation if the thread is tied outside of the anus and a loose loop left. Out of eighteen cases there has been no infection from the ligature or abscess, as the drainage is complete. At the end of three months the patient is again anesthetized and the seton withdrawn. A grooved director is passed through the fistulous tract behind the stricture, and the intervening stricture band severed with a Paquelin cautery.

Patient is kept in bed one week after seton is inserted, and again one week when the stricture is divided. After each operation for two weeks the bowel is irrigated daily with solution of boracic acid.

My cases have nearly all been dispensary patients, and some of them have never returned for advice, and the result can not be determined.

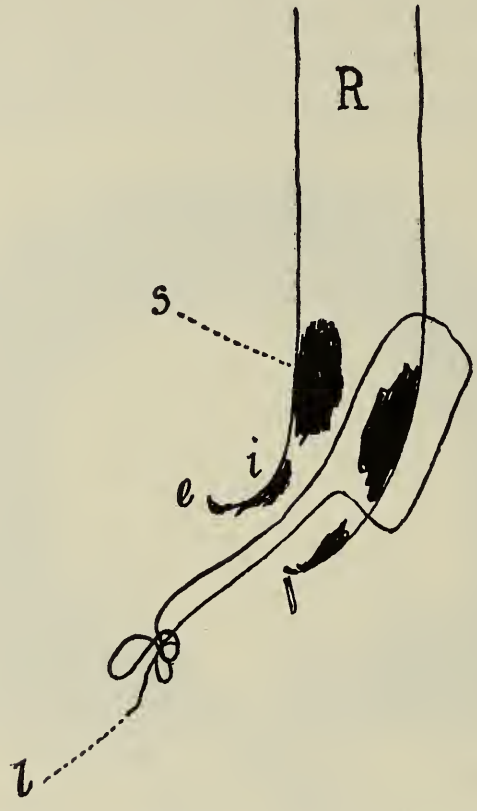

FIG. 3.—*R*, rectum; *i*, internal sphincter; *e*, external sphincter; *s*, stricture band; *l*, ligature in place.

In three cases there has been a partial failure, and I am convinced that this is due to not taking in more tissue above and below the stricture band, so as to catch all the scar tissue above and below the real constriction.

Several cases are apparently cured, yet the time is too short to determine this. The relief has been more permanent than after proctotomy, and as the sphincter muscles are left intact one serious result of proctotomy is avoided.

PROCTOPTOMA–HOMINIS; WITH A BRIEF STUDY OF ITS CAUSATION, PATHOLOGY, SYMPTOMATOLOGY, AND TREATMENT.

BY THOMAS H. MANLEY, M. D.,
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Prolapse of the ano-rectal outlet of the large intestine, or procidentia of an aggravated type, is not a very uncommon although always a most distressing infirmity. Its full evolution, or even the more ordinary forms, are quite generally restricted to the male sex, although it is occasionally witnessed in the elderly female. The infirmity is rarely encountered until after middle life. It is usually attended with constipation, an irritation of the rectum, and frequently a copious discharge of colloid material is mixed with each evacuation. Sometimes mucoid material alone comes away in considerable quantities. Many individuals, the subject of proctoptoma, from the distress which they endure in evacuation of the bowel from the necessary straining and pain, imagine they have stricture or malignant disease. These patients are all of a melancholy, neurotic caste, and constitute a trying class to deal with.

Etiology. The recent potent etiological fact in the evolution of recto-anal ptosis is age. We have precisely the same causes in operation in this condition in the male as we have in the multiform varieties of prolapse in the female, viz., a senility of the nervous system, in which there is loss of muscular tonicity, atrophy, or degeneration of the contractile elements of the levator-ani and the sphincters.

When prolapsus-ani occurs in a young person past puberty, clinical features are always present which point clearly to the coexisting neurotic influence, which, being effaced, the infirmity disappears. Maellintock, Barnes, and Reynier have noted, among some of the determining causes, any sudden or violent muscular strain, as in epileptic convulsions, straining violently at stool, or rectal stricture. In one case of a young man, who had an impacted calculus in his urethra, who was treated by me from time to time, on making an effort to urinate he would pass

the rectal mucosum through the anal sphincter. The primitive cause therefore resides in the nervous system, reflected through atony of the muscular elements, with structural changes in all the parts contiguous with the bowel, in senile chronic cases.

Pathology. Exclusive of the type of anal prolapse of young children, we have other varieties depending on widely diverse pathological conditions; for example, in their order of frequency:

1. *Hemorrhoidal prolapse of the verge.*
2. *Simple acute prolapse without organic change.*
3. *Hypertrophic or neoplastic prolapse.*
4. *Prolapse complicated by malignant disease, fecal impaction, or stricture.*

In all aggravated cases of either internal or external hemorrhoids, the seat of acute inflammatory changes, there is more or less eversion of the ano-rectal fold. In very severe cases the extruded mass is extremely turgescent and forms a bulk nearly as large as the fist.

The mucous membrane of the rectum is specially characterized by its remarkable vascularity and the thick layer of loose connective tissue which underlies it. These two strata only descend through the sphincter in *simple prolapse.* The internal sphincter, which is about three centimeters above the anus, relaxes, and the external expands enough to allow the engorged tissues to slip through, when they are again caught and compressed after escape.

The lower third of the mucous lining of the rectum is loosely adherent in some animals, as the horse, in which each act of defecation presents a marked eversion. This type of eversion or prolapse in man is generally produced by three causes. The first is violent straining; the second, atony of the sphincters; the third, vascular turgescence.

The *hypertrophic prolapse* involves a complex process. The initial changes are inflammatory, first involving the vascular structures, and later extending into the submucous and muscular tissues. In the course of time we have not only extreme engorgement of the compromised parts, but also a large cellular hyperplasia and a true hypertrophy of all the connective tissue elements with marked fibrinous changes. All the capillaries are greatly enlarged, and in many situations a free anastomosis exists

between the terminal larger radicles of the veins and arteries. The most marked degenerative changes are noted in the muscle structures, the smooth and striped. The aggregation of circular and oblique muscle fibers, which constitute the internal sphincter, are wasted or undergoing degenerative changes. The glandular elements of the mucous membrane have multiplied and enlarged the new and hypertrophied adenoid elements, giving rise to an increased and altered secretion.

The most marked hypertrophic changes involve the lymphoid and connective-tissue elements in close proximity to the mucosum. In some cases the enlarged, protruding mass is made up chiefly of altered vascular structures, enormously expanded veins and arteries, with thrombotic anus, and territories the seat of localized hemorrhagic infarcts and hyperplasic proliferation.

Inflammation. When these hypertrophic, structurally changed ano-rectal masses are not of great volume, when the sphincters have maintained their organic integrity, and when they are easy of reduction and retention, they may occasion but slight inconvenience. But as they lie in the path of the fecal current, constantly exposed to trauma and infection, and they are often forced out through the anus and caught up by the sphincter-ani, they soon become *inflamed*, the inflammatory exudate spreading far into the circumjacent parts and encroaching so extensively into the muscular tissue of the intestine as to interfere with or to diminish its nutrition and induce atrophic changes.

Ulceration. In chronic cases the protruded mass is exposed to atmospheric irritation, the chafing of the garments, and violent distension in straining at stool. The mucous membrane becomes eroded in places. In various areas, owing to obliterative endarteritis, thrombi or large infarcts in the compromised area become the seat of neurotic disintegration, leaving a worm-eaten appearance on detachment, exquisitely sensitive and prone to free bleeding on the slightest provocation.

In certain individuals of a low vitality, as the tuberculous, syphilitic, or dissipated, the tendency to excessive hyperplasia, or an early breaking-down and ulceration, with surface or central sloughing, is well marked; thus sometimes, through the clinical *ensemble* present, under certain circumstances, unless cautious discrimination is exercised, one may confound an ulceration

of this type with malignant disease. *Prolapse complicated by adventitious growths, or malignant disease,* sometimes is present as an associate, if not, possibly more strictly speaking, a causative factor.

Neoplasms. A middle-aged man came under my care some time since for the treatment of what he supposed was simple prolapse. On examination I found a well-defined submucous growth just inside the verge on the right side, about the size of a hen's egg. This came out every time he went to stool, though he was always able to return it until lately. Later, on ablation, it proved to be a dermoid cyst. Its removal promptly cured him.

Condylomata, except polypi and many other growths, are sometimes met with in prolapse. *Malignant growths of the epithelial order* never descend through the anal portal, because their infiltrating elements tend to fix them securely to the ischial margins.

Sarcoma seldom involves the anus. This is the general experience of pathologists. Only one case has come under my notice, in a young woman. This was an adeno-sarcoma, which seemed to have its start in the submucous tissues of the fourchette. It had a sessile base, and on defecation would slip out through the anus.

Fecal impaction in the cavum-recti is a condition not very uncommon in women and elderly men. In this class of cases a great deal of straining is necessary for the expulsion of the ordinary daily evacuation. Marked eversion of the verge, transient or permanent, is one of the common complications to continue until the impaction is dislodged.

Syphilitic or other types of stricture of the rectum are often accompanied by varying degrees of prolapse, depending on similar conditions as those which obtain in fecal impaction.

In the female we have several sexual factors coming into play peculiar to her sex in recto-anal prolapse. In the parturient, damage to the levator-ani in labor, with an inward sagging of the posterior vaginal wall. Posterior displacement of the uterus or bladder, senile trophic changes, with a tendency of *all* the genitalia to slip through the vaginal outlet, are not infrequently observed.

Symptomatology and Diagnosis. The most dominant symptoms in the average case of anal prolapse point to hemorrhoids. In aggravated cases, attended with a large prolapse of the rectal mucosum, symptoms of stricture or cancer, or both, are present. In all, more or less pain is experienced, with vesical irritation. The patient is conscious of an irritation suggestive of the lodgment of feces in the rectum. The surface of the extension may freely bleed, in some cases leading on to a marked exsanguination and enfeeblement of the general health. In acute cases, as these, in which the mass consists of engorged, strangulated, thrombotic hemorrhoids, the agony is so great and the febrile condition so well accentuated that one can scarcely mistake them for any other lesion, even without exposure. When diseased veins play the leading rôle a history of hemorrhoids will suggest the type of prolapse present; although patients so often deceive themselves about piles, their word alone can not be depended on.

The pain, tenesmus, hemorrhage, and symptoms of mechanical impediment at the outlet of the intestine may lead the unwary into the suspicion of malignant disease. In fact, from the clinical history alone no one can form any thing like a definite opinion; when we turn to the next, the final and positive test:

Physical Diagnosis. Thanks to the marvelous advances in the study of the sciences, and the numerous applications of modern art to the detection of disease, we are now enabled to accurately ferret out and unmask a vast number of lesions in the cavities contiguous with the orifices of the body, and in none with more ease and precision than at the ano-rectal orifice and outlet. Here we depend on vision, touch, and sometimes the sense of olfaction. The *tactus eruditus* is more valuable than any other means in ano-rectal diagnosis.

In the female we realize the fullest measure of its great value. By dilatation of the sphincter ani and with the aid of properly constructed specula, conjoined with concentrated, direct or indirect incandescent light, we may now expose to the eye the entire rectal tube as far up as the peritoneal reflection.

The physical examination, when possible, should be made only after the rectum has been well washed out. The mucosum should be well benumbed by applying a cocaine solution. Our procedure

must be conducted with gentleness, deliberation, and the greatest scrutiny.

It is unnecessary, even if the limits of this contribution permitted, to direct attention to the demarkating lines in differential diagnosis, for they must be based on the same general principles, as far as pathology and bacteriology are concerned, as in any other class of lesions, something which it is assumed every practitioner is familiar with.

Our course of therapy depends on the revelations of a scientific diagnosis. This is the key to the situation. Precision and accuracy here, conjoined with a broad knowledge of diseased conditions, with a matured experience provide the key and open the way to a safe and rational line of treatment.

On the Treatment of the Various Types of Ano-Rectal Prolapse; Hernia Recti. Until the late and salutary reaction against indiscriminate mutilating operations, the "up-to-date" surgeon would have but one answer to make if requested to give his advice on the most effective means of curing all types of rectal prolapse. It would be, *excise! a clean wound, prompt union, and end of the infirmity.*

Time, however, which is a great leveler, with a careful comparison of the results of radical and tentative methods, has conclusively demonstrated that operative procedures are called for in only a comparatively small number of cases of rectal prolapse; in none, except the chronic variety attended with extensive structural alteration of the anatomical elements, those of a neoplastic or malignant character.

No class of quacks which infest the larger cities and do extensive advertising enjoy greater thrift than those who limit their sphere to rectal work. Their remarkable success is an outcome of conservative methods of treatment, with a happy faculty of playing on the credulity of their *clientèle,* for the greater number of those suffering from the more ordinary types of rectal infirmities are highly neurotic.

All suffering humanity have an instinctive dread of surgical operations, and most people are always ready to resort to nearly any thing rather than submit to a surgical operation. In rectal lesions it is fortunate that this is the case. First, because when such operation is at all extensive the danger to life or the future

well-being of the patient is not inconsiderable, especially in the hands of the untrained or inexperienced; and, secondly, in a certain proportion of these operable cases the results are not satisfactory.

It is clearly evident, therefore, that with a correct knowledge of the pathology we must vary our plan of treatment. The different methods of treatment for convenience and utility may be divided into, (1) *Internal or constitutional;* (2) *Local, tentative measures;* (3) *Radical or operative.*

In *systematic or internal treatment* our first concern should be to thoroughly clear the large intestine from the caput coli to the anal outlet, being certain that these areas, so prone to fecal lodgment, are well emptied, as the cecum, the sigmoid, and the rectal ampulla. A congested, sluggish, hepatic circulation should be stimulated by a mild cholagogue laxative containing some form of mercury. The greater number of these patients are gouty or rheumatic. Engrafted on the engorged state of the veins is one of these diethetic conditions which must be healed through the circulation, to meet which condition the tincture of æsculus, hippocastanum (horse-chestnut), colchicum, the salicylates, and alkalies may be used with advantage. High living or the free imbibing of alcoholics must be interdicted. In the local treatment we have to deal chiefly with widely different pathological conditions. For the varicose eversion of the verge, of any description except the hypertrophic, all can be remedied without the loss of a drop of blood. There is no class of distressing lesions that more can be done for with better results by baths, irrigation, massage, electrization, compression, support, and topical applications. This line of treatment should be comparatively painless; should always bring early relief and final cure. It should always be impressed on the sufferer, however, that patience and perseverance on his part are necessary. Topical medication is an important adjuvant in treatment. Sedative substances incorporated with tar and simple cerate make a most soothing application.

Ano-rectal prolapse, with interstitial changes in the histological elements, is essentially a species of hernia; there has been a giving way of the normal support of the mucosum, inflammatory or atrophic changes in the sphincters; there are commonly senile influences in operation. It therefore follows that now a more complex line of treatment must be adopted.

To begin, we should *first* be assured that all those morbid conditions which lead to violent straining be removed as far as possible. Of all things the large intestine must be completely unloaded; and if the patient suffer from stone in the bladder or urethral stenosis, these should first be treated. Very much may be accomplished in the way of relief or cure by *trussing* up the descending mass by a pad and bandage support, and giving *rest* to the overstrained sphincters. To this may be added electrolysis, douches, local abstraction of blood, or astringents.

The dominant pathological changes witnessed here are in the vessels, which are greatly dilated, superadded to which are abundant inflammatory deposits. Such treatment then as will impart renewed tone to the muscular elements and stimulate the absorbents to greater activity, is what is demanded. In the majority of cases it will succeed. When tentative, palliative measures fail, the question of operative interference is forced on us.

With one of sound organs and no other serious infirmity we should not hesitate to recommend complete ablation of the hypertrophied mass. The operation itself is not a difficult one in the hands of an experienced surgeon, although to the inexperienced, for a procedure apparently so simple, it is full of peril. It will be observed that the invaded territory is little more than a vast network of angiomatous structures which extend some distance up the intestine. The loss of blood will be very great if proper precautions are not taken to provide prompt and effective hemostasis. The greatest care must be taken not to divide the muscular fibers of the sphincters, and hence invite certain and permanent incontinence of the feces. As this region is greatly exposed to contamination, the utmost care must be observed to secure perfect asepsis during operation and to maintain it afterward; skill and experience are desirable in the operative technique. Our aim should always be here to secure solid, primary union; this failing, a large, open, infected ulcer follows, tending greatly to stricture of the outlet on healing.

Operative success in this distressing class of cases means a prompt restoration of function with a renewed lease of health and comfort.

Those cases of prolapse associated with benign neoplasmata

or malignant growths will be dealt with on those general surgical principles which should govern us in all capital operations.

Infantile prolapse, always remediable by simple expedients, is not considered here; nor linear cauterization, cuneiform excision, colopexy, or many other measures, often of doubtful value, and worse than useless in cases of senile or trophic degeneration of the muscular supports.

RECENT ADVANCES IN RECTAL SURGERY.*

BY A. B. COOKE, A. M., M. D.,

Lecturer on Diseases of the Rectum, Medical Department University of Nashville; Member Tennessee State Medical Society; Middle Tennessee Medical Association; the Nashville Academy of Medicine, etc.

NASHVILLE, TENN.

Mr. President and Fellows of the Academy:

So wonderfully has the science of medicine developed in recent years and so radical have been the changes which have marked that development that a summary of the advances in any department must necessarily be fragmentary and incomplete. If I may be pardoned for expressing so bold an opinion, I believe this is peculiarly true of that fundamental department known as rectal surgery.

Nourishment and waste are the foundation principles of organic life. The latter of these is typified by the rectum and its special function. There is not an organ in the body nor a process essential to life which is not in some measure dependent on this principle and affected by departure from the normal of this function. I hope I fully appreciate the value of the special senses and the importance of those branches which deal exclusively with their disorders. Yet not one nor all these senses is necessary to life, well-being, nor even happiness. In reference to the rectum, however, the contrary is true. Let it be attacked by disease of whatever kind, and the entire organism responds in quick and ready sympathy, while cessation of its function means death.

I do not believe that I am disposed to magnify unduly the line of work in which I am especially interested, but I am dis-

*Read before the Nashville Academy of Medicine, November 19, 1896.

posed to recognize and emphasize its great usefulness and importance even in a presence as august and erudite as this. In spite, therefore, of the difficulties which beset the topic assigned me, I hail with some degree of satisfaction the opportunity afforded by this occasion.

Probably the most notable advance rectal surgery has ever made, and one which I take great gratification in citing, has been accomplished within very recent years. I refer to the change it has undergone in the estimation of the profession. This is no less than radical. Formerly a reproach and an opprobrium by reason of the irregular methods to which its followers resorted, there is now no branch of the healing art regarded more legitimate nor accorded greater respect. This advance is unique in the history of medicine. It is likewise most significant both as indication and augury. Barriers of sentiment have been swept away, and disdainful discrimination as to the comparative importance of organ or function merely argues that the professional *cad* is not yet wholly extinct. This change of base, then, as opening the way and rendering possible the scientific work and progress in this department I would give first place among the recent advances in rectal surgery.

Entering now into the discussion of the subject in its more practical bearings, the questions of symptomatology and diagnosis naturally at once present themselves. Along these lines advances of the most far-reaching import have been made. We now recognize that every pain referable to the rectum and vicinity is not necessarily produced by "piles;" that constipation is not always due to "torpid liver;" that diarrhea in its most intractable form frequently springs from and is maintained by a rectal lesion, and that dysentery, especially the chronic form, is often falsely so called. We have learned that the reflex nerve impulses emanating from the ano-rectal region are incomparably more powerful than those from any other source, and that they may and do manifest themselves in a great variety of complex phenomena. We have also discovered that these reflexes, though as a rule pathological in expression, admit of wide utility as therapeutic agents.

The subject of rectal reflexes is a fascinating one, but one invested in such a maze of uncertainty and involving so many

intricate questions that the consideration it merits would prolong this paper far beyond its proper limits. It will not be amiss, however, as constituting recent advances under this head, to indicate briefly a few of the practical applications to which these reflex forces may be put.

In a communication entitled "A New Method of Resuscitating the Still-born," which appeared in the *American Medico-Surgical Bulletin,* issue of February 1, 1895, it was my privilege to call the attention of the profession to an application the originality of which, so far as I know, has not been challenged. Dilatation of the sphincter ani was the method advocated. Many reports received since the appearance of the article have served to justify the claim made. Of course, like every other remedy, it has its limitations; but, employed in the case of a normal viable child, threatened with death from asphyxia, no instance of its failure has come to my knowledge.

Another noteworthy application of this principle is seen in the same simple procedure. In the whole broad range of medical practice no emergencies are encountered more alarming than the accidents of general anesthesia, and none which call for more prompt and intelligent action. A sufficient number of well-authenticated cases are on record to warrant the statement that in many of these conditions also divulsion of the sphincter ani offers the speediest and most effective means of resuscitation. That person is dead indeed whose cardiac and respiratory centers will not respond, at once and vigorously, to the stimulation of a suddenly stretched sphincter.

The two illustrations cited suggest other conditions in which benefit might reasonably be expected to follow this maneuver. But during the past few years so many extravagant, not to say ridiculous, claims have been heralded in regard both to the pathology and therapeusis of rectal reflexes that the entire subject has fallen into discredit. This is neither wise nor right. Conservatism in medicine is well enough, but prejudice is as bad as ignorance. In this day of strange measures and remarkable methods the only safe guide is to be found in the old scriptural admonition, "Prove all things; hold fast that which is good."

The great central object of medicine is the cure of disease, and those advances worthiest the name are ever made along the line

of treatment. In this regard especially rectal surgery has kept pace with the wonderful progress in other departments. The principles which have made modern surgery what it is underlie the advancements made in this field also. Systematic preparation of the patient, rigid antisepsis, which even in this region is not a chimera, thorough technique, and careful attention to details both during and after operation—these are the elements of successful rectal work. To take up the separate diseases and endeavor to recount the many advances in their treatment would be to reflect upon the information of this Academy and trespass unduly upon its time and patience. But I can not forego a few specific words in regard to those best known and most frequently encountered.

Constipation is perhaps the most universal, and certainly in many cases the most unconquerable of all diseases. We have awakened to the fact that this is not the simple and harmless condition it was once regarded, and with a broadened knowledge as to its complex nature and wide-reaching effects have come to realize its great importance. We now understand that, while in some cases it is merely a symptom, it is usually entitled to be regarded a disease and treated as such. The cholagogue-purgative-enema method of treatment has been to a large extent abandoned and measures substituted which are based on the more scientific idea of removing the cause. Among these measures may be mentioned regulation of diet, attention to the hygiene of defecation, and abdominal massage. In my remarks upon the reflexes I intimated that rectal diseases sometimes have this indirect origin. This is notably true of constipation. In such cases the external sphincter is usually at fault. This is one of the most sensitive areas in the entire body, and a lesion so minute as to escape observation not infrequently gives rise to chronic spasm and irritability of the sphincter which result in marked hypertrophy. These cases are quickly and often permanently relieved by thorough divulsion. At the same time a careful examination may be instituted and any pathological condition present receive appropriate treatment.

I may here refer to the novel and somewhat remarkable method of relieving this trouble reported to the Academy a few years since by one of her most gifted members. I can neither

comprehend nor trace the relation between eye-strain and constipation, but am not disposed to question its existence. My respect for the reflexes as factors in disease has grown with study and experience until I have reached the point where I refuse to be surprised at any exhibition of their prowess.

The true aim and ultimate purpose of our profession are embodied in the idea of preventive medicine. For this reason, in considering this class of diseases, I have mentioned constipation first. Its recognition as the primary cause of a large majority of rectal diseases marks a genuine and very important advance in rectal surgery.

In appearance anal fissure is the most insignificant of all lesions of these parts. As a pain producer, however, it stands correspondingly pre-eminent. The barbaric method of treatment instituted by Maisonneuve about the middle of the present century has been practically discarded. It consisted of introducing the hand into the bowel, closing the fist, and suddenly withdrawing it. As an effective procedure it was doubtless a success, but not infrequently must have been as disastrous as heroic. Now, when divulsion is deemed necessary, it is accomplished gradually and cautiously under the relaxing and humane influence of general anesthesia. But the practice originated by Boyer in 1818 in the majority of cases leaves nothing to be desired. This consists of placing the anus gently on the stretch with a bivalve speculum and incising the superficial fibers of the sphincter in the base of the fissure. A few drops of a four-per-cent. solution of cocaine injected just beneath the lesion renders the operation entirely painless.

The condition known as ulceration of the rectum has long been a reproach and a stumbling-block to the regular profession and an unfailing source of revenue to the quack; the former, because of imperfect methods of examination and unsatisfactory results of treatment; the latter, because the credulity of a public ever eager to be humbugged, has allowed ignorance and unscrupulousness to be cloaked under this vague but well-sounding term. And in truth, among all the diseases to which the rectum is subject, there is none more difficult to treat. But we have learned that even the most refractory cases are curable if one unvarying rule is established and rigidly enforced. That rule is *rest*—abso-

lute rest in the recumbent position. This point gained the victory is half won. The parts being permanently relieved of the physiologic congestion incident to the erect posture, it only remains to apply carefully and intelligently the well-known principles upon which the treatment of similar lesions of the mucous membrane in other situations depends.

I have stated that along all lines rectal surgery has kept pace with the rapidly changing steps of modern progress. This is the rule. If an exception exists it is in reference to the treatment of internal hemorrhoids. Except as modified in method and improved in technique the treatment of this disease is the same to-day as in the time of Hippocrates. I refer to the method most generally employed, the ligature operation. The only method which may be considered a rival to this is the one devised by Smith, the clamp and cautery treatment. The application of this idea to the treatment of hemorrhoids is of comparatively recent origin, and by many ardent advocates is thought to mark the most signal advance rectal surgery has ever made. I can not stop here to discuss the relative merits of these two operations. Each has its points of excellence and advantage. But, summing them all up and laying special stress upon the considerations of safety and general applicability, I wish to be understood as holding very decidedly to the opinion that no real advance has been made in the method of treating internal hemorrhoids within recent years.

Of the injection treatment it is scarcely worth the while to speak. True, it has a certain very limited range of usefulness; but, if results instead of methods are to be regarded, the one fact alone that the large majority of cases treated by this plan show recurrence in from three to five years unreservedly condemns it. It is where it should be, viz., in the hands of the charlatan, and rectal surgery scores a not insignificant advance in so relegating it.

In keeping with the prevalence and popularity of this complaint ("piles") many ingenious innovations in treatment have from time to time appeared. For one reason or another these are all open to serious objection, and with singular unanimity the profession has frowned upon them. However meritorious, they are by no means established, and it would be inappropriate as well as profitless to accord them specific mention.

The present treatment of rectal fistula has little that is novel to offer. Within narrow and well-marked limitations the operation known as Lange's may be regarded an improvement. But it is only applicable to those cases which have a single straight sinus, and such a condition is seldom encountered. The question of the relationship between fistula and tuberculosis is still *sub judice*. The tendency, however, is strongly toward advancement. The intimate mutual dependence of these conditions is not recognized in modern teaching except as a curious popular superstition. If after careful examination it is found that anesthesia can be borne, no system of reasoning can establish the theory that two exhausting diseases are better for the patient than one. In these cases some modification of the usual treatment is doubtless advisable, but, under the condition stated, the propriety of operation does not admit of question.

Following closely and logically upon the many recent advances in pathology the treatment of rectal stricture has undergone great and truly progressive changes. With the aid of the microscope differentiation of the benign from the malignant is now a matter of accuracy, and cases formerly regarded hopeless and allowed to drift onward without intervention to destruction are constantly being relieved and redeemed. Referring to the benign variety, dilatation rapid and gradual, proctotomy, Kraske's operation, and colotomy are the more important resources now at our command. In this field modern surgery has made some of its most brilliant achievements. Even rectal carcinoma with all its despairing features has reaped rich benefit in the comfort and prolonged life secured to its victims.

But the length this paper has already reached warns me not to enter further into the discussion of stricture. The subject is so broad and its phases so numerous and varied that even a hurried review would exceed the limits of your indulgence.

Keeping before me the very general nature of my theme, my effort has been simply to indicate the more important items of improvement and advance. The result is merely a cursory glance in which many features of interest and importance have been wholly omitted, others passed with the briefest allusion. The scope of the subject assigned me is my apology for an incompleteness which you can not have failed to note and of which I am regretfully aware.

Just one concluding thought. If there is any single principle which has contributed more than others to the elevation and advancement of this branch of our science, it is to be found in the rapidly growing recognition of the necessity of thorough physical examination in all cases of rectal disease. Improved instruments and methods of examination have rendered possible the utmost accuracy of diagnosis. It only remains for them to be carefully and systematically employed in every case. Then, with exact knowledge as to the condition present and the perfected means of treatment with which recent advances have equipped us, rectal surgery is at once and forever divested of those factors which have heretofore conspired to its disrepute.

164 N. Cherry Street.

GEROTA, D.: THE LYMPHATICS OF THE ANUS AND RECTUM. (*Arch. f. Anat. und Entwick; Boston Medical and Surgical Journal.*)

The author made his injections of the lymphatics in young children, having first filled the blood-vessels. His results seem to confirm those of Quénu, but he has gone further and has discovered glands, which he calls anorectal ones, on the outside of the rectum lying directly on the muscular coat. He finds that the lymphatics of the cutaneous part of the anus open usually in the upper inner group of the inguinal glands. The lymphatics communicate above, apparently pretty freely, with those of the mucous portion. These latter are extremely rich on the columns of Morgagni, and very scarce in the depressions between them. The vessels on the columns connect with those of the mucous membrane of the rectum proper above. The glands are at the back along the course of the inferior hemorrhoidal arteries. The fact that the lymphatics follow the blood-vessels is worth noting. Exceptionally lymphatics run, as seen by Quénu, to a gland at the side of the pelvis near the greater sacro-sciatic foramen. The lymphatics of the muscular coat are injected with great difficulty in man; according to observations on dogs they follow the course of those of the mucous membrane. The author points out that in operations on the rectum these new glands should be remembered, and states that the rectum is separated from the sacrum by a fibrous layer for which Waldeyer proposes the name of *fascia propria recti.*

Gastro-Intestinal Disease.

INTUSSUSCEPTION TREATED BY COLONO-ENTERIC IRRIGATION.*

BY EDWIN PYNCHON, M. D.,
CHICAGO, ILL.

A criticism of medical writers occasionally met with is that cases, particularly in the line of surgery, are sometimes reported too soon, and statistical results are thereby obtained which are not justified, owing to later developments. In the case here reported I have erred in the opposite extreme by having allowed so many years to elapse since the case was treated. In fact I have often related the experience to medical friends, and as often expressed an intention to some day prepare a paper based thereupon, but until now have always allowed procrastination to thwart the purpose. Additionally the incentive has been somewhat weakened by my drifting away from the practice of general medicine and becoming year by year more and more identified with special work; but meantime, during this lapse of years, I have never failed to read with interest all papers bearing thereupon of which I could learn, and having never found detailed an experience similar to mine causes me to feel it all the more incumbent that I should make the report without further delay.

October 23, 1891, I was summoned to call as soon as possible to see Mary C., aged fourteen, whom I found in bed and suffering much discomfort if not actual pain. The mother, a woman of more than average intelligence and one who had had much experience with sickness, gave me a brief history of the case. The patient's previous health had been good until two weeks before, when she became constipated, and for the last three days there had been no alvine evacuation whatever, notwithstanding the fact that cathartics had been freely given. Rectal enemata of hot water had also been employed, and even a clyster of one pint of sweet oil, but all with negative results. On the preced-

*Read before the Chicago Medical Society, November 16, 1896.

ing day she suddenly began to complain of abdominal tenderness and pain, principally in the left hypochondriac region. She refused food and displayed a tendency to nausea, though no actual vomiting had occurred. By preference she remained in bed. For several days the patient's principal diet had been cheese and crackers, though she had also been eating freely of both grapes and oranges, in each case swallowing the seeds. Furthermore, I learned that she was addicted to the chewing-gum habit, and acknowledged that she had been swallowing some of the gum. She had always practiced the rapid method of eating, with but slight mastication, often described as "bolting the food." The abdomen was distended and somewhat tympanitic, though no distinct tumor could be discerned by palpation. Tenesmus was complained of and the sphincter ani was much reflexed. There had been no fever.

I administered a colonic flushing, using about three quarts of water at a temperature of about 110° F., with the effect of bringing away some orange seeds and several pieces of orange, including a core the size of a butternut. In giving this douche I placed the patient in the knee-chest position over an inverted chair upon the bed. And here let me say that the retaining of this position is both annoying and difficult for the patient unless some such support is given, and nothing is more available and practical than the means described. After the douche the patient experienced less uneasiness at the point of pain. I left an opiate to control the pain should it become worse, and ordered the giving of a very hot bath and a repetition of the colonic flushing after the use of the following saline enema:

℞ Magnesia sulph ..... ℥ ij;
Glycerini ..... ℥ j;
Aquæ ..... ℥ iv.
S.: Inject at once and retain.

I additionally left two grains of calomel in one-sixth grain tablets, one tablet to be given every half hour, and when all were taken to be followed by a seidlitz powder.

Upon the following evening I again called and found the patient's condition unimproved. The pain had returned and had at times been considerable; no further passage had occurred except about half a cupful of grape seeds; there had also been

slight vomiting. The mother had become quite alarmed, as she fully realized the gravity of the trouble, and favored the making of an abdominal section. I allayed her fears and assured her that I was hopeful of correcting the difficulty by hydrostatic measures. It now seemed plainly apparent to me that I had to deal with a case of intussusception, though there was an absence of some of the more common symptoms. No distinct tumor could be detected, neither was there any passage of blood, the latter being the more rare exception. Hiccough was also absent, but this is a symptom more pronounced after the third day. There had not been present either the characteristic violent colicky pains nor the usual pronounced vomiting.

In his Essentials of Practice, Hartshorn,* in treating of intestinal obstruction, says: "Few maladies present so striking a contrast as this between the facility of pathological explanation after death and the obscurity of diagnosis and uncertainty of treatment during life." While I fully appreciated the weight of the foregoing statement I had planned a line of treatment for the success of which I was enthusiastically hopeful.

In acute intestinal obstruction it is apparent that the occlusion occurs through the exertion of power directed downward and outward due to the peristaltic writhing of the intestines and Nature's effort toward the expulsion of some portion of the intestinal contents—*ergo*, if a complete reversal of such action can be secured the greatest promise of an undoing of the occlusion is given; hence to secure such result the first step would naturally be to invert the patient, and second, to force a fluid from the rectum through to the stomach. It seems reasonable that hot water would prove to be the best available agent, the heat thereof assisting to induce the relaxation desired. Now as we have premised that the occlusion occurs through the application of some degree of force from above, and one in which I believe the generation of intestinal gases plays an important part, the next indication is to apply a greater force from below, and this may be secured by thoroughly distending the intestines below the constricted point, coupled with forcible bi-manual manipulations of the abdomen. To retard or stop the natural peristalsis the pressure must be constant instead of intermitting, so as to temporarily

*Philadelphia, 1874, page 234.

paralyze the natural muscular action, and in order that these steps may be taken without the resistance of the patient an anesthetic must be given, which incidentally tends to further induce intestinal inactivity.

Keetley, † in his excellent brochure entitled an Index of Surgery, recommends such line of treatment as follows: First anesthetize, next invert, then give enema while inverted, and lastly do taxis by forcibly kneading the abdomen. He gives no hint

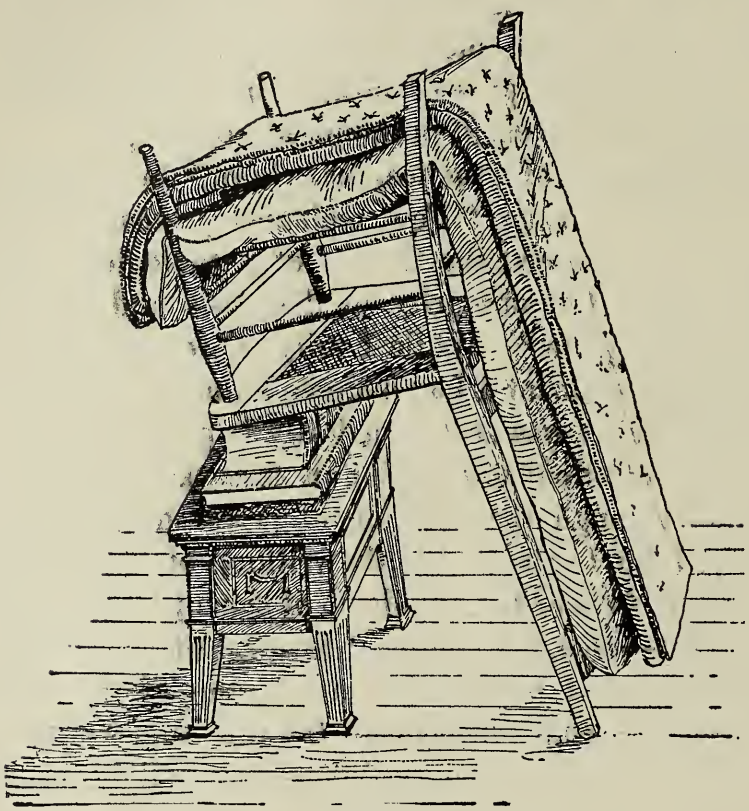

Fig. 1.

as to either the temperature or quantity of enema to be employed. I decided to elaborate upon this suggested line of treatment by having the water as hot as could be safely used and by letting the quantity be gauged entirely by the patient's capacity. I furthermore appreciated the necessity of using a syringe tip capable of preventing the escape of water after it had entered the bowel.

In order to suspend the patient in an inverted position I hastily extemporized a support as follows: In the center of the room I inverted a high-back dining-room chair so the top of the

† New York, 1882, page 150.

back rested upon the floor, and under the front edge of the seat I placed a bootblack stand, with some large books thereupon, which made a support of a sufficient height to permit the back of the chair to slope at an angle of about 75°. I have since thought a piano stool would have been even better. I next placed over the chair a bed bolster and covered this with an old quilt folded about six times lengthwise. The patient was quickly anesthetized with chloroform, which for several reasons was in this case the preferable anesthetic, and was then suspended over the chair, face downward, with her head near the floor and her thighs well secured between the legs of the inverted chair. The condition of anesthesia was kept up during the entire procedure. A fountain syringe was then filled with water heated to about 110° F., and the bag was hung up as high as the ceiling of the

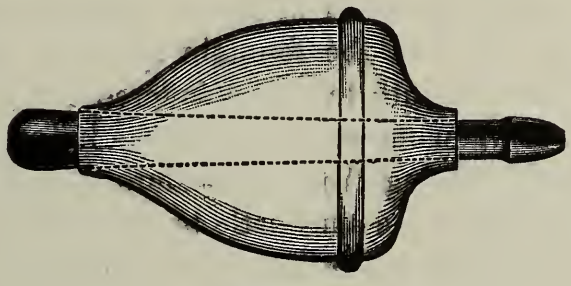

Fig. 2.

room would allow, the room being on the second floor of a two-story house, and hence it was not possible to further increase the fall of the water. Had the operation been done on the lower floor the syringe-bag, by lengthening of the tube, could have been carried gradually up stairs until all the pressure wished for was secured. I decided that by forcible abdominal massage I could get the equivalent of at least double the five feet of fall with which I had to be contented. A trouble anticipated was the great tendency the water has to escape from the anus as soon as the colon is partially filled. In this case I found the sphincter so much relaxed that it would allow the entrance through it of a tip one and three eighths inches in diameter. I next tried a soft rubber bulb nozzle one and three fourths inches in diameter, surrounding an ordinary hard rubber rectal tip, and this I found served as an efficient cork to prevent the escape of water and would perfectly retain the same.

Another trifling feature, though of importance, is that I had materially enlarged the opening through the hard rubber tip so the passage of water would be more rapid. Whenever the water displayed a great tendency to escape, indicating that the rectum and colon were filled, I had the flow stopped by compressing the tube, and while the tip was being firmly pressed against the anus practiced abdominal massage until the expulsive spasms ceased. In this way I alternated the flow of water and forcible kneading of the abdomen for about half an hour, meantime forcing into the bowels between two and two and one half gallons of the heated water. At times the flow of water ceased with the slight fall I was using, owing to the resistance from intestinal distension, though massage each time caused it to again move.

My efforts were suddenly crowned with success by a violent gushing of water from the patient's mouth until somewhere near a gallon thus escaped. I of course immediately stopped further flow of water from the fountain syringe. From this discharge of water by mouth the child suffered no harm whatever, and none of the water found its way to the lungs. By the time the water ceased flowing from the mouth the patient had sufficiently recovered from the anesthetic to allow of her being placed right side up and upon a slop-jar, when another gallon of water escaped in the proper direction. The child was then put to bed, and while somewhat exhausted looked but little the worse for wear. The water which escaped by mouth was not much discolored, and the last gallon which was passed by rectum contained but little fecal matter.

I called two days thereafter and found the patient up and about. The mother advised me that she had been sleeping well and was eating her meals as usual, and had just had her first normal stool. While the patient herself was somewhat coy and retiring, I succeeded in extracting from her a promise to never again indulge in such a heterogeneous diet.

Since my treatment of this case I have found two papers bearing upon the subject worthy of particular mention. In a paper entitled Intestinal Obstructions, the late Dr. Robert Battey‡ asks why water in the living subject can not be forced through the intestinal tract until it escapes at the mouth? In one case

‡ Atlanta Med. and Surg. Jour., June, 1874, page 129.

wherein he injected from eighteen to twenty pints of soapy fluid, the patient claimed to be able to taste the soap. In another case free vomiting of discolored fluid occurred. In experiment upon the cadaver water was easily forced through the bowels until it flowed from the mouth. His belief was that two and a half or three gallons could with safety be used, but he cautions that no air be allowed to enter therewith, as air or gases cause colic. He also deprecates the use of any kind of colonic tube, wisely reasoning that water will best find its way unaided. In all cases of intestinal obstruction he urges the persistent use of distensile enemata of from ten to twenty or more pints of water. His custom was to give these injections with the patient in the recumbent posture.

W. E. Forrest, ‖ in a paper upon Intussusception and the Use of Injections, states as the result of his experiments that the maximum pressure which the intestines of an adult will stand is fifteen pounds to the square inch, while in the case of a small child the maximum is about nine pounds. Hence in practice, in a recent case of bowel obstruction, we can with safety use about six pounds pressure with a child and about double that with an adult. He deprecates a bulb syringe as being dangerous and recommends the use of a fountain syringe with a tube of sufficient length so that by having the bag carried up the stairs the pressure required can be readily secured. Each two and one half feet of rise increases the pressure one pound, hence a fifteen-foot fall gives a six-pound pressure, and so on as the height of the reservoir is increased. He particularly insists upon the importance of maintaining a continuous pressure, as an intermitting stream tends to aggravate the trouble.

The conclusions to be deducted from a study of the case here reported, and a digest of the literature pertaining to conditions of acute bowel obstruction, are:

That copious enemata promptly and persistently employed are indicated in the early stages of acute intestinal obstruction.

That the patient must be anesthetized and suspended in a position of inversion.

That the water should be as hot as can be safely used, and there should be available no less than three gallons.

‖ New York Medical Record, October 5, 1891, page 371.

That a rectal tip must be used which will positively control the escape of water from the rectum, and that no long colonic tube is required.

That no air must be allowed to enter the gut, and the water pressure must be constant and not intermitting; meaning by that a disapproval of the earlier method of alternately filling the gut so far as possible and then allowing it to empty itself.

That while the pressure must not be allowed to weaken, the onward flow of water can be made to alternate with forcible abdominal massage.

That the fall of water may be varied from fifteen to thirty feet, according to the age of the patient and the stage of the trouble, providing a lesser fall of say six feet in alternation with massage is not successful.

Columbus Memorial Building.

A CASE OF CHRONIC DIARRHEA, GASTRIC DILATATION, AND OPIUM ADDICTION SUCCESSFULLY TREATED BY LAVAGE.*

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This case is recorded on account of its complications, duration, and the rapidity with which the patient responded to simple, inexpensive, rational treatment; also the responsibility of doctors and druggists in handling prescriptions.

In 1893, Mr. O., aged forty-four, by occupation a marble polisher, presented himself to me for treatment. He said that he had lost fifty pounds in weight; that he had had diarrhea for the last eight or nine years, which followed an attack of dysentery; that he had a prescription which he had taken all this time in order to be able to work, having it refilled every ten days; that he vomited every morning, and sometimes would find food coming from the stomach which he had taken the morning previous; that he was rapidly getting worse, unable to sleep, eat, or

*Read before the Buffalo Academy of Medicine in November, 1896.

work, and that many doctors had failed in his case, the *quacks* and all.

By inspection the patient exhibited a pallid and a sallow countenance, melancholic expression, clammy skin and coated tongue. He was anemic, chlorotic, languid, debilitated, and displayed other symptoms of long-standing toxemia. In a word, he looked like one with malignant disease of the liver, stomach, or pancreas.

The prescription taken so long as his only "pick-me-up," contained six drachms of tincture of opium to a four-ounce mixture. The dose, a tablespoonful before meals three times a day, gave the man one grain of opium every twenty-four hours.

I requested the patient to have his stomach washed, but he refused. Asked him if he did not think there was something the matter with his stomach? He replied that "he thought the food rotted in his stomach."

Two months of medical treatment did good only so far as to enable him to get along without the opium mixture. When medicine and restricted diet without opium failed to cure, I told him the only thing left was lavage, as his stomach was badly out of order.

Patient left me and consulted two advertising physicians, who at once put him upon opium pills, sprayed out his nose with peroxide of hydrogen solution, told him he was dying with catarrh, and in two weeks time had his picture and name in the paper as cured. When the patient wanted to quit the pills they prescribed, he could not, and was again getting worse when he returned to me again for treatment. He said "he would have his stomach washed out or taken out, just as I said." This expression showed his extreme condition.

The first washing was at 6 P. M., after his usual dinner of bread and meat at noon. The meat was evacuated through the tube as it had been masticated, though somewhat more disintegrated with the odor of decomposed albuminous material. Capacity of stomach was at first washing eight to ten pints with little inconvenience. After the twelfth washing the patient complained of fullness after five pints were introduced.

Diagnosis. Is this condition one of true gastrectasia or one of motor insufficiency? The clinical symptoms reveal a typical case of atonic gastric dilatation without further examination of

the stomach's contents or its capacity. There is the vomiting of food swallowed some twenty-four hours before, foul breath, flatulency, and many other gastric disturbances showing impairment of muscular force and deficient gastric juice with a complete failure to digest proteids.

Treatment. Stomach washing kept up twice a week for ten weeks. Dilute hydrochloric acid in ten-drop doses in plenty water after meals, half to be taken immediately after eating and balance in fifteen minutes. Pancreo-bismuth before meals in half-teaspoonful doses. Diet restricted to Zweibeck bread, white of egg and milk. Curdled milk agreed with this patient well, and he took it every morning. A little rum, about two teaspoonfuls, was added to the white of egg and milk every four hours. Out-door work was advised, and the patient is working about the parks of Buffalo to-day, strong and well, with a weight of about two hundred pounds or more, hale and hearty.

The cause of the whole trouble was chronic diarrhea, dependent upon motor insufficiency of the walls of the stomach which allowed undigested material to pass into the intestinal canal, and by fermentation and irritation stimulated too active peristalsis and oversecretion of the succus entericus. Motor insufficiency was due to opium, which lessens gastric secretion, causes indigestion and diminishes gastric peristalsis. If opium entered into the causation of the disease, the stopping of it certainly did not cure it. Improvement began only when lavage began as a therapeutic agent, and then it was immediate and permanent.

Was a further examination of stomach contents or its capacity necessary? If so, the diagnosis would not have been more certain nor treatment more successful.

Distending stomach with air to aid in percussion, the passing of the sound to aid in palpation, or of introducing both air and water to aid in auscultation, is not without danger in a suspicious case of malignancy. A coincident occurred which saved the writer and another physician an unpleasant experience.

A patient with suspected malignant disease was to have an examination made of the stomach on a certain day at 10 A. M. The night before the friends decided not to have it done. The next morning, at the appointed time for our examination, a hurried call came from the patient, and I found her dying from a hemorrhage into the stomach and bowels.

You will all agree with me that it is far better that this thing should occur naturally rather than at the time of an examination with stomach tube, sound, and other instruments as contributing agents.

As in this case, lavage is a very simple and absolutely necessary routine of treatment in many gastro-intestinal disorders. It would be used more if the general practitioner were not unnecessarily embarrassed by the extensive chemical analysis of the stomach contents and the elaborate maneuver for ascertaining its capacity given in books and spoken of by the specialists. There is only one kind of food undergoing digestion in the stomach, that is the albuminous. There is only one kind of acid needed for that work of digestion, that is hydrochloric. Pepsin is seldom if ever absent. Hydrochloric acid is commonly deficient in gastric disturbances. The three sets of muscular fibers in the walls of the stomach mean that motion and rhythm are indispensable. Like any organ when out of order, we must give it less work to do or strengthen its weak points.

These conclusions are given out, not to discourage or undervalue the scientific investigations necessary in differential diagnosis, but to encourage and render less difficult in the minds of many a physician the application of lavage.

Should a doctor write a prescription with any narcotic substance without requesting the druggist not to refill the same without further orders? Should a druggist continue to fill and refill such a prescription without notifying the patient of the danger, or the physician that such is the case? You may answer.

ETIOLOGY OF APPENDICITIS.*

WHY IS IT MORE COMMON IN THE ANGLO-SAXON RACE?

BY JAMES S. CHENOWETH, M. D.,
LOUISVILLE, KY.

I dislike to preface a paper with an apology, but I feel that I am taking an undue advantage of my guests in inflicting upon them a paper of this length with its somewhat tedious recital of details, with which many of you are doubtless familiar, without a word in extenuation.

When I entered the ranks of the profession, seven years ago, the importance of the appendix as a factor in the production of inflammatory affections of the peritoneum was just beginning to be generally recognized.

We need not go back to even so recent a period to recall earnest discussions over the very existence of the appendix as an intraperitoneal structure, or the more heated arguments as to the necessity, or not, of surgical interference in any case of appendicitis.

The whole subject of appendicitis has been so earnestly and thoroughly worked over in this society since that time, and our ideas have undergone such a rapid and continuous process of evolution that we have been all but ready to declare the argument closed. However, at least so far as the etiology is concerned, I am becoming more and more convinced that this evolutionary process has been too rapid to thoroughly eliminate the "unfit," and I present this paper for the purpose, first, of reviewing the evidence upon which our present opinions are based; second, of introducing new evidence, direct and circumstantial; third, of obtaining a candid criticism of this evidence, the deductions that I have drawn from it, and of theories which seem to me plausible.

It is not without some diffidence and hesitation that I present this paper to the Louisville Surgical Society, realizing only too well its imperfections.

The explanations that I have suggested of some of the more important phenomena noted in connection with this subject are

*Read before the Louisville Surgical Society, Nov. 23, 1896.

in my opinion justified by the data at our command, but these data are insufficient to justify any sweeping generalizations. I have purposely avoided any detailed report of personal cases, which from the very nature of things can only in exceptional instances be more than corroborative, and whether future observations confirm the opinions expressed herein or not, I am satisfied that a more extended investigation of the etiology of appendicitis along the lines suggested will amply repay us.

That we may fully appreciate all the factors concerned in this complex disease process which we term appendicitis, let me briefly recall to your mind the more salient features in the anatomical relations of this organ as well as its histological structure. The appendix vermiformis, the atrophied remnant of the true cecum, is found attached to what was originally the apex of the cecum, usually on the inner and posterior aspect of the bowel, close to the ileo-cecal valve. The relative position of the appendix is subject to many variations, which have not, however, been shown to bear any constant relation to disease of this structure. The appendix varies, likewise, in length and caliber in individuals, in the male and female, and at different periods of life. Its length will average at its greatest development from three to four inches, being four-fifths inch longer in male than the female. It is usually entirely invested by peritoneal folds derived from the inferior layer of the mesentery of the ileum; these folds forming as a rule a triangular mesentery for the appendix, the base of the triangle being formed by the free edge of the folds. The attachment of this meso-appendix may extend along the entire length of the appendix, more often only to the proximal two thirds; more rarely the meso-appendix is absent and the appendix floats freely in the abdominal cavity.

The appendix is commonly found curved upon itself, owing to the shortening of its mesentery. Along the free edge of this meso-appendix runs the appendicular artery, the essential nutrient artery of the appendix. It is a terminal branch given off from an anastomotic loop, formed by the superior mesenteric and the ileo-colic; and where the mesentery is absent it runs beneath the peritoneal coat of the appendix.

The lymphatics of the appendix pass into the appendicular lymphatic ganglion, which lies in the angle formed by the ap-

pendix and the cecum. In the female lymphatic channels pass along the appendiculo-ovarian ligament between the folds of the peritoneum, forming this structure and establishing communication between the appendix and ovary. (Clado.)

The nerve supply of the appendix is derived from the superior mesenteric plexus of the sympathetic through filaments given off by the branch accompanying the ileo-colic artery.

The appendix is made up of four layers: (1) A more or less complete covering of peritoneum which we have noted. (2) A muscular coat made up of two layers, an outer portion consisting of a few long non-striated muscular fibers mingled with a varying amount of fibrous tissue and an inner portion of circular fibers, thicker and more regularly distributed than the outer. (3) The submucosa, a thick layer formed of areolar tissue, containing numerous lymphoid glands, and through which ramify numerous small arteries and veins supplying the mucous membrane; between this layer and mucous membrane a thin layer of circular muscular fibers may be distinguished, the muscularis mucosæ. (4) The mucous coat is composed of a delicate rectiform tissue, with a basement membrane, lined with columnar epithelial cells. It contains in its meshes numerous lymphoid cells and has dipping into it a number of mucous glands. About the orifice of the appendix the lymphoid tissue is oftentimes deposited in increased amount and may partially obstruct the opening. I have not attempted, in thus running over the anatomy of the organs, to more than refresh your memories on the more salient points.

The earlier observers looked upon foreign bodies as the chief factors in the production of appendicular disease, but this idea has not been borne out by more extended experience, as they have been found in only about four per cent. of operative cases. They may act, however, by producing abrasions of the mucous membrane and opening an avenue of infection by mechanically interfering with the exit of the mucous secretion from the appendix, or by direct pressure effects interfere with the nutrition of the organ and bring about necrosis.

Fitz, in his paper, laid special stress on the influence of fecal concretions as most frequently causing disease of the appendix, and this view has been very generally accepted. On close

investigation this seems to be a very questionable matter. [1]Klebs, in an examination of four hundred specimens, concludes that the vermiform appendix has usually very little contents, which he attributes to the fact that the normal musculature regularly voids its contents. He found fecal stones in thirty-eight of the four hundred specimens, and equally in both sexes; this tallies with the reports of other observers. These stones have been found repeatedly in appendices in which their presence had given rise to no imflammatory action, and moreover have only been found in about fifteen or twenty per cent. of operative cases of appendicitis. The evidence tends to show that these fecal stones form in the appendix from the absorption of the liquid portion of the fecal mass, and as the result of the inability of the appendix to normally void its contents; and while it is not questioned that by these pressure effects necrosis and infection may be brought about, their very presence in the appendix presupposes an inability of the appendix to empty itself. If this were due to lack of development of its muscular coat, it should be manifested in very early life, otherwise the natural presumption would be that some alteration in the structure of the appendix must take place, interfering with the evacuation of its contents, and clinical experience has shown stricture of the appendix to be a frequent source of trouble. Another possible element in the production of appendicitis, to which I have called attention several times, is the overdistension of the appendix by gas or fecal matter during violent muscular efforts; given a colon distended with gas and fecal matter, it is not difficult to understand how the increased pressure brought about by lifting or straining at stool, coughing, vomiting, etc., might forcibly distend the appendix and produce sufficient trauma to start an inflammatory process.

Another source of appendiceal trouble, although doubtless not a frequent one, lies in the extension of an inflammatory process to the appendix from other organs by continuity or contiguity of tissue. That a catarrhal or ulcerative process beginning in the cecum may extend thence to the appendix, or that an appendix becoming adherent to diseased pelvic organs may become thus secondarily infected, is unquestionable.

[1]Annual of the Universal Medical Sciences, 1894.

From a *practical* standpoint the *most important* factors in the *development* of appendicitis are the *pathogenic bacteria*, and of these the colon bacillus seems to be most in evidence. It is almost invariably found in the intestinal tract, and in the presence of sound mucous membrane seems to be without power for evil. However, when the mucous membrane has been destroyed, or the intestinal canal has been subjected to constriction and its circulation interfered with, the colon bacillus may penetrate the intestinal wall and show both pathological and pyogenic properties. It has been found in almost all cases of perforative appendicitis, frequently alone, sometimes associated with other pus-forming organisms. Typhoidal and tubercular ulceration have also been observed in the appendix in a not inconsiderable number of instances.

A most fertile source of appendix trouble is believed by most authorities on this subject to exist in a special liability of the appendix to nutritive disturbances, from *interference* with its *blood supply*, by an *insufficient mesentery* or by *torsion*. This point is especially dwelt upon by Fowler in an exhaustive report of his [2] "Observations Upon Appendicitis." In answer to the question, Why, if the same pathological laws govern the tissues of the appendix that govern the other tissues of the body, do they assert themselves so much more frequently here than elsewhere? he says there is one prime factor which more than any other is responsible for this fact, to wit, that here, as nowhere else certainly in the abdominal cavity, the parts are peculiarly exposed to circulatory and hence to nutritive disturbances. Prof. Van Cott's careful examination of many specimens furnishes convincing proof that vascular and nervous lesions are important factors to ultimate disease of the appendix. In addition to this, proof is furnished by the interesting fact that females are less frequently stricken with the disease than males; and that, as already stated, in the female sex an extra supply of blood is furnished to the appendix through the medium of the appendiculo-ovarian ligament, a fact bearing notably on the question of nutrition. In all of the specimens examined, thirteen in number, there was revealed the presence in the mesenteric vessels of some form or other of obstruction to the

[2] Annals of Surgery, 1894.

blood current, either endo-vasculitis or organized thrombus, conditions which must in the nature of the case have long preceded the intense, small round-cell infiltration, coagulation necrosis and purulent foci present in the walls of the appendices themselves. In several cases, in addition, a distinct neuritis interstitialis chronica supervened; in one, the hyperplastic endo- and perineurium being so abundant as to have caused extensive atrophy of the nerve fibers. It is indisputable that such lesions of vessels and nerves can only result ultimately in a most profound disturbance of the appendical tissues, with lessened resistance and localized necrosis. Why the appendix, for example, should be free from the consequences of anemic infarct so certain in the renal and other tissues endowed with a terminal circulation, is difficult to comprehend. On the other hand, if the trophic fibers which must exist in the nerves of the meso-appendix be subjected to pressure through hyperplasia of their connective tissue sheath to the extent of causing atrophy, trophic changes must necessarily occur in the appendix itself, and will be co-extensive with the nerve lesion.

Assuming the correctness of these conclusions, it is evident that two things are possible: (1) That the real cause of the locus minoris resistentiæ, which admits of bacterial infection of the appendix, must be sought, not in trauma of the mucosa but rather in trophic disturbances of the appendix, resulting from (*a*) chronic vascular lesion, (*b*) chronic nervous lesion, or (*c*) both of these combined; and (2) that this trophic disturbance will be intense or moderate, depending upon the nature of these lesions. Hence it must follow that ulcerative processes in the appendix, while they may be increased by bacterial invasions, may, nevertheless, owe their origin to the trophic conditions. Therefore it must always be difficult to prove that a given ulcerating process or pus-focus in the appendix is due to bacterial invasion primarily, and the more especially is this true when lesions of the vessels and nerves of the mesentery obtain. It would seem much more cogent reasoning to assume that bacterial invasions were made possible by the lessened resistance of the part through defective nutrition than that primary necrosis is the result of direct invasions of germ through a normal mucosa.

The American Text-Book of Surgery, after noting the rela-

tions of the peritoneum to the appendix, says: "We have here the factors which enter into the production of a large number of cases of appendicitis; distension of the caput-coli with gas or fecal matter will cause dragging on one or the other of the folds already too scanty, increase the torsion of the appendix, interfere with its blood supply through its single vessel, and according to the degree of torsion produce congestion and tumefaction, catarrhal inflammation, ulceration or gangrene, with the clinical symptoms which belong to each."

To those less familiar than are the members of this society with the protean manifestations of this disease, it would seem that the subject of the etiology of appendicitis had been exhausted; but when in the light of our present knowledge we attempt an explanation of even the most notable phenomena of the disease we find how incomplete and unsatisfactory our knowledge is. Almost without exception writers on this subject have recognized the appendix as an atrophied rudimentary organ, poorly supplied with muscular power, and in consequence voiding its contents with more or less difficulty; its circulation as terminal and easily obstructed by causes which would produce little serious effect in other portions of the digestive tract, and its lymphoid tissues as of low vitality and of feeble resistant power. In connection with these factors, its dependent position, its communication with the cecum by an orifice more or less narrowed, with the consequent liability to impaction of feces, or foreign bodies and the entrance of infectious organisms, have accounted satisfactorily for the frequency with which this organ becomes diseased; but how little light this throws on the questions, Why is appendicitis so much more frequent between the ages of ten and thirty; in the male that in the female sex; in the Anglo-Saxon race? What is the influence exerted by climatic conditions and by heredity?

It is asserted that "in very early life the funnel-shaped appendix offers fewer opportunities for the formation and retention of masses of inspissated feces, while in old age atrophy of the mucous membrane about the cecal orifice again widens it, but we lack positive knowledge on these points."[3] If we accept the usual description of the anatomy of the parts concerned,

[3] The Amer. Text-Book of Surgery.

there seems to be no good reason why appendicitis should be found in men four or five times more frequently than in the female, but if future observation confirms the assertion of Clado, that a fold of peritoneum passes from the right ovary of the meso-appendix, the appendiculo-ovarian ligament, and if this fold carries a blood-vessel, an obvious and sufficient explanation has been found.

It has been shown (Bryant) that the male appendix is four-fifths of an inch longer than that of the female; that its caliber is slightly larger, and possibly as a result of the latter fact contains fecal concretions in a larger percentage of cases, but these circumstances do not seem to throw much light on the subject.

"The reasons advanced (Fowler) for this very decided comparative immunity of the female sex from appendicitis have been unsatisfactory heretofore. Morphological differences would naturally first attract the attention of the original investigator. The presence or absence of structural variations have not, to my knowledge, been determined as between the two sexes. Histologically, so far as I am aware, the appendix of the female is identical with that of the man. In its location and direction the differences are not sufficiently marked to even base a theory upon. The nerve supply is believed to be precisely the same in the two sexes.

"The existence of a process of peritoneum passing from the right ovary to the meso-appendix (the appendiculo-ovarian ligament of Clado) *was not demonstrated to exist* in but a *single* instance in *ten cases* studied with reference to this point. When present it is believed to assure some degree of immunity against the disease by increasing the blood supply and thus increasing the local vital resistance.

"The only other anatomical variation as occurring between the sexes which has been noted, is that relating to the arrangement of the lymphatic vessels. Between the folds of the appendiculo-ovarian ligament of Clado, the latter observer has noticed the existence of lymphatic channels which establish a communication between the appendix and ovary. Whether a communication between the lymphatic vessels of one organ and those of another may serve in affording protection of either the one or the other against diseased conditions can not, in the light of our present knowledge,

be intelligently discussed. While, generally speaking, the lymphatic vessels of the appendix pass directly into the appendicular lymphatic ganglion which lies in the angle formed by the appendix and the cecum, this arrangement may vary, particularly in the case of the female. In at least one instance of appendicitis occurring under my observation, in a female child of eight years, there existed a chain of enlarged lymphatic glands along the free border of the meso-appendix. Some of these were as large as the tip of the little finger and were so located as to bring more or less pressure to bear upon the appendicular artery. The appendix in this case was gangrenous at its distal extremity."

In other words, we are to believe that the larger caliber of the appendix in infancy and old age offers fewer opportunities for the formation and retention of inspissated feces, while the larger caliber of the male appendix as compared with the famale makes it more liable to contain fecal concretions, and thus more liable to inflammation. But if fecal concretions only play a small part in the causation of the disease and are found with equal frequency in both sexes, even this accommodating theory is insufficient.

Again, a short mesentery causes dragging on the appendix and an interference with its blood supply; a long mesentery allows such freedom of movement that torsion must result. Truly, the appendix, like "man born of woman, is of few days and full of trouble."

However, Fowler, after a critical study of the conditions which govern the blood supply, a study specially directed to the presence or absence of a meso-appendix, concludes, "so far as I am able to judge from the examinations of appendices removed in a diseased condition, the disease occurs quite often in those individuals in whom a well-formed and vascular meso-appendix is present as in those in whom the mesenteric attachment is but slightly developed or altogether absent."

The freedom of the female sex from appendicitis is not accounted for by the supposed additional blood supply to the appendix, as the ligament of Clado has only been found to exist in about one woman in ten; and, if the observation just quoted from Fowler be correct, its presence would seem to make little difference. Admitting, however, that this ligament does exist more frequently and that it carries a blood-vessel, and that this

is a protection to the appendix, we would still be as far as ever from an explanation of the frequent occurrence of the disease at certain periods of life. If irritative conditions, such as are associated with constipation or diarrhea, dragging on the meso-appendix by distension of the cecum with gas or fecal matter, or the presence in the appendix of pathogenic bacteria, were of prime importance in the causation of appendicitis, it is difficult to understand why the disease should be most frequent about puberty, when the vital forces are most active, and when the factors above mentioned are probably less active than at any other period of life.

Do we not lose the key to the situation when we consider the appendix as a functionless organ, or that at most its function consisted only in the secretion of a little mucus? I take it that no one considers the function of the appendix as a vital one, or even of any great physiological importance, but is it reasonable to hold the tissues of the appendix subject to different physiological and pathological laws from similar tissues in other portions of the body? Have we any reason to believe that the lymphoid tissue of the appendix differs materially from the lymphoid tissue in other portions of the digestive tract, or is subject to other physiological and pathological changes, except as modified by its anatomical relations.

Clado[4] found the structure of the appendix similar to that of the large intestine, and, according to the same author, it must be looked upon as a glandular organ rather than an organ of absorption. Its mucous glands and lymphoid tissue are much developed, and in the normal state the appendix never contains fecal matter.

Ribbert[5], of Zurich, in a microscopical and macroscopical study of four hundred specimens, concluded that the appendix undergoes a process of retrogression during the life of the individual, which manifests itself in, first, shortening; second, changes in the histological structure of its walls, and, thirdly, spontaneous obliteration of its lumen. That in the newborn its length averaged $3\frac{2}{5}$ centimeters; up to five years, $7\frac{2}{3}$ centimeters; five to ten years, 9 centimeters; ten to twenty years, $9\frac{3}{4}$ centimeters; twenty to thirty years, $9\frac{1}{2}$ centimeters; thirty to forty

[4] Annual, vol. 1, '93.
[5] Annual of '94.

years, $8\frac{3}{4}$ centimeters; forty to sixty years, $8\frac{1}{2}$ centimeters; over sixty years, $8\frac{1}{4}$ centimeters; the greatest length thus being between the ages of ten and thirty years. Its dimensions are relatively larger in the newborn than the adult. Twenty-five per cent. were found partially or completely obliterated; the shorter the appendix the more frequent its obliteration. This obliteration he considered a retrogressive process and not pathological. In the ninety-nine cases out of four hundred the percentage of obliteration according to age was: One to ten years, 4 per cent.; ten to twenty, 11 per cent.; twenty to thirty, 17 per cent.; thirty to forty, 25 per cent.; forty to fifty, 27 per cent.; fifty to sixty, 36 per cent.; sixty to seventy, 53 per cent.; seventy to eighty, 58 per cent. Thus we see that the appendix, after steadily increasing in size, reaches its greatest development between the ages of ten and thirty years. After this age retrogressive changes are marked and very constant, twenty-five per cent. being obliterated. This is in perfect harmony with the behavior of similar tissue in other parts of the body, notably the thymus, the solitary and agminated gland of Peyer, and the tonsils, all of which reach their greatest development at or before puberty, and normally atrophy after this period.

The function of the vascular glands is now generally recognized as intimately concerned in the formation and preservation of the blood corpuscles. The almost constant presence in their tissues of larger quantities of uric acid as well as the nitrogenous bodies, xanthin, hypoxanthin, etc., than in other tissues less rich in nucleated cells; and the fact that these uric acid leucomaines occur as decomposition products of nuclein render the inference a fair one that some special nitrogenous matabolism must occur.

[6] "The opinion that the vascular glands serve for the higher organization of the blood is supported by their being all especially active in the discharge of their function during fetal life and childhood, when for the development and growth of the body the most abundant supply of highly organized blood is necessary. The bulk of the thymus gland in proportion to the body appears to bear almost a direct proportion to the activity of the body development and growth; and when, at the period of puberty, the development of the body may be said to be complete, the gland

[6] Kirke, Hand-book Physiology

wastes and finally disappears. (The spleen more nearly retains its proportionate size and enlarges nearly as the whole body does.) Although the function of all the vascular glands may be similar in so far as they may all alike serve for the elaboration and maintenance of the blood, yet each of them probably discharges a peculiar office in relation to the whole economy and to that of some other organ."

Not only do we find this close analogy in the development of the lymphoid tissues of the appendix and similar tissues in other situations, but we find it likewise in the disorders of these structures. Take the tonsil, for example. In speaking of the predisposing causes of tonsillitis,[7] Delavan says "the first and most important factor seems to be youth, since it is most prevalent between the age of fifteen and twenty-five." It is rare in early childhood and after fifty. McKenzie, out of 1,000, found 601 occurred between ten and thirty; Delavan found 165 out of 260. McKenzie believes "that sex is not without influence in producing chronic hypertrophy of the tonsil, for out of the 1,000 cases 673 were males and 327 females." Delavan, out of 260 cases, 169 were females and 91 males; 162 of the 169 females were under thirty years of age, while of the males, 84 out of 91 were under thirty.

"Hypertrophy of the tonsil greatly increases the liability of the individual to acute attacks of tonsillitis. Sometimes this seems to be due to retention of excrementitious matter in the enlarged lacunæ, which acts as an irritant to the tissue and excites inflammation; and again the tonsil seems, in many cases, to be a vulnerable spot which is apt to sympathize with various irregularities of the body and to be subject to inflammation as the result of dyspepsia, the strumous diathesis, and, most important of all, rheumatism and gout. General conditions of ill-health may predispose to tonsillitis. It may be caused by mental depression and by unusual care and anxiety. Exciting causes are exposure to cold and wet; there can be no doubt, however, that septic influences often play an important part in their production, but it is highly probable that without some predisposing general condition the chilling of the surface of the body through exposure to cold would have little effect. The disease is more prevalent

[7] Encyloped. Dis. Chil., Keating.

during the spring months than the three winter months; finally, it may arise from various traumatisms, such as wounds, impaction of foreign bodies in swallowing; and from the irritation due to secretion in the tonsillar crypts."

Again, the same author says, "In many cases the tendency to tonsillar inflammation seems to be directly hereditary and not referable to any mediate condition, for while in such instances it might be supposed that the presence of such an inheritance might be due to the existence in parent and child of a common diathesis, the rheumatic for instance, nevertheless more than one case has been known to the writer in which no such diathesis could be traced. Climate may also play an important part."

To go back to appendicitis: At least four years ago my attention was first attracted to a seeming connection between the so-called rheumatic diathesis and the occurrence of appendicitis. I was forcibly impressed by several cases in which tonsillitis or other manifestations of the rheumatic diathesis were associated with or followed disease of the appendix, and also with the apparent beneficial results of treatment directed to this condition.

The belief that there was some connection between disease of the appendix and some general constitutional conditions was further strengthened by noting the occurrence in more than one instance of the disease in several members of the same family; the frequent occurrence of the disease under certain atmospheric conditions; and finally, by the frequency with which a history of unusual muscular exertion, fatigue, and exposure to cold and wet preceded the appendix trouble. Several of these points have been noted by other observers, but not satisfactorily explained.

Talamon[8] reports instances in which appendicitis occurred in several members of the same family, and refers to similar instances reported by other authers, but does not attempt to explain wherein the hereditary predisposition lies; whether in the length of the appendix, its breadth, or its structure, or in the disposition of Gerlach's valve. To his mind the frequency of appendicitis among the Anglo-Saxon race can not be explained by peculiarities of their habits of living.

Deaver[9] says, "I have had cases due to exposure to cold and wet. In one the attack was caused by taking a cold shower just

[8] *Med. Mod.*, 1896, vol. 9; *American Medico-Surgical Bulletin.*
[9] Treatise on Appendicitis.

after coming out of a warm bath; another was the result of wet feet, and a third from being chilled by lying in a cold room shortly after a heavy meal."

While looking up the subject of the appendix vermiformis Dr. North[10] had been startled by the number of cases of appendicitis reported and referred to. In seeking the explanation he had visited the health office of Brooklyn and studied the relative number of deaths for the several years since 1880 from peritonitis, perityphlitis, typhlitis, appendicitis, intussusception, obtruction of the bowels, colic, perforation of intestine, ulceration of bowels, perforation of appendix, and constipation. The percentage of deaths from these combined causes had been, in 1880, 1; in 1888, $1\frac{1}{4}$, and for the successive years to 1895 it had been $1\frac{1}{3}$, $1\frac{1}{10}$, $1\frac{1}{4}$, $1\frac{1}{3}$, $1\frac{1}{2}$, $1\frac{1}{3}$. It was obvious that since there were more deaths from these causes there must be more cases in the aggregate, else the treatment was faulty. It was not likely surgical technique would much further diminish the death-rate from operative interference, and Dr. North thought the difficulty lay in practitioners giving up as soon as a patient complained of a pain in the right side and calling in a surgeon, instead of resorting to early local antiphlogistic and internal remedies.

It would have been more charitable to the surgeon and nearer to the truth in my estimation, had Dr. North concluded: Notwithstanding the improvement in surgical technique during the past five years and the great number of lives saved by operative interference, the percentage of mortality from appendicitis has increased. This can *not* be explained by the small percentage of deaths from *operative* interference and due to *preventable* causes; and would not be effected by the much *larger* percentage of deaths due to *delayed operation* where the usual *medical* treatment had been employed, and obviously can only be due to a vastly increased number of cases occurring during these years from some unknown cause. And I would suggest that the epidemics of influenza during these years bear a casual relation to this great increase.

Haig[11] gives the notes of a case of Garrod's. It was that of a very gouty man, aged fifty, in whom, after exposure to cold, gout retroceded to the intestines, producing intense inflammation of

[10] *Medical Record*, Nov. 24, 1896.
[11] "Uric Acid as a Factor in the Causation of Disease."

the last eighteen inches of the ileum, as found after death, and also of a case recorded by Prof. Hayem, where enteritis occurred, the villi being strewn with small uratic incrustations, and he continues:

"Such a concentration of urates in the fibrous walls of inflamed intestine just as they concentrate around the lower alkaline fibrous tissues in joints, spleen, and kidney, in several of which they may be present in sufficient quantities to be visible to the naked eye, constitutes what I have spoken of as gout of the intestine, and forms, I believe, the anatomical condition behind such troubles as colic, enteralgia, and not a few cases of typhilitis."

At the risk of being unduly tedious, I shall quote some further observations of Haig. He says: "My clinical and experimental experience have led me to believe that a very large number of cases, such as I have mentioned, are neither more nor less than a gout of the walls of the intestinal tubes, and that a knowledge of their true pathology places us at once in a position to effect a complete and satisfactory cure by the use of the same drug which in my hands gives the best results in cases of arthritis due to uric acid, and I shall further point out that such colic or enteritis can be produced by giving certain drugs, all of which have the same action on uric acid, viz., that of driving it out of the blood into the tissues." Prominently among these drugs he mentioned mercury. "As in several other matters connected with gout, it was my personal experience that first directed my attention to the points that I am now bringing forward. Some eight or nine years ago I noticed that when I was suffering from some gastro-intestinal trouble, such as that which commonly produces an attack of uric-acid headache, and that when I treated this trouble by taking a small dose of calomel I sometimes produced pretty severe intestinal pain, which was generally located in or about the right iliac fossa. On one occasion, when a small dose of calomel, one grain, produced slight pain in this way, I thought that the purgative action had been insufficient and that a larger dose was indicated; the result of this, however, was to produce very severe pain indeed, which confined me to bed and the house for several days and made me quite unhappy about myself, as I feared that I had typhlitis. At this time, however, I knew very little about gout of the intestines, and nothing at all about the solubility of the urates of mercury, hence, beyond a mental note to avoid as far as possible the use of calomel for the future, the lesson was lost upon me. A year or two later, when taking some cocaine for purposes of experiment, I was surprised to find that it was followed on several occasions by somewhat similar pain, and this pain, which was partly due, I

think, to cocaine and partly the result of cold and occasionally wet feet late in the autumn, became chronic with relapses, and awakened my old fear of typhlitis and serious organic disease. So much was this the case that I consulted a friend on the matter, and at his suggestion was making up my mind to take several months' rest and change of climate when I chanced, still following out my experiments to some extent, or possibly prompted by some previous experiences, to take a few doses of salicylate of soda, and the effect was magical; pain was better soon after the first dose, and in two days was gone for good and all.

"I now began to see that I was not suffering from serious organic disease, but from a gout of the cecum accompanied by a certain amount of colic or enteralgia and enteritis, and when I afterward found out the insolubility of the urates of mercury I was easily able to understand why this metal had produced the pain on a previous occasion and why salicylate of soda had cured it so completely on this last occasion.

"Since this time I have had no further anxiety on the score of this intestinal disorder; I have often had it, and will undertake to produce it any time by the use of any of the other drugs I shall mention presently, but I have now complete confidence that I can put an end to it in a few hours' time by means of salicylate of soda. I have also treated several cases that were clinically typhlitis in the same way, and have every reason to be satisfied with the results.

"One of the most recent of these was in the person of a relative of my own, who is a member of the profession. I happened to hear that he was ill with what sounded like typhlitis, and I also heard that he had taken a dose of calomel before the attack begun. It at once struck me that this was a repetition of my own experiences, and I went to see him as soon as I could. I told him what I had found out in my own case, and persuaded him to let me add a little salicylate of soda to the mixture he was taking. The result was in every way as satisfactory as in my own case.

"He at once began to improve, and in two or three days was up and about, while prior to the administration of this drug it appeared only too probable that his illness would be a matter of weeks. The history of this case is as follows: After one or two rather extensive dinners and champagnes he had a little disturbance, and with the intention of putting this right he took a few grains of calomel, and a few hours later was seized with violent colicky pains in the right iliac region. The pain came in attacks which were worse at night and caused nausea; there was an ill-defined fullness with tenderness in the right iliac fossa,

and temperature about 100° F. He asked a neighbor to come to see him, and lay in bed often groaning with pain, and with warm poultices constantly applied to the painful region; he took a carminative mixture, and a nurse was obtained for him; this was the condition of things when I went to see him, and, with the concurrence of a neighbor who was looking after him, added salicylate of soda to the mixture, with the result mentioned.

"There was, I think, no doubt in the minds of many of us that we were dealing with typhlitis, or a condition so like it that it deserved to be treated with great respect; but there was also in my mind no doubt, from the history of its causation, but that it would yield at once to salicylate of soda, and this proved to be the case.

"I have mentioned the pain produced by cocaine, and cocaine also diminishes the excretion of uric acid; likewise acids, nux vomica, and sulphates, especially sulphate of soda, occasionally acting the same way, may cause some intestinal pain of a similar kind; they diminish its excretion in the urine, clear it out of the blood and drive it into the liver, spleen, and fibrous tissues, especially into the fibrous tissues that have their alkalinity diminished by any previous irritation or inflammation. They produce this effect on uric acid, either by forming insoluble compounds with it, as in case of the metals, or they diminish the solvent powers of the blood through the absorption of acids from the intestines by the lymphatics, thereby diminishing its alkalinity, and under slightly different conditions any of them may produce gout of a joint instead of gout of the intestines.

"No one, I suppose, will deny that there is a large amount of fibrous tissue in the walls of the intestines, and if the fibrous tissues in fascia, tendons, and joints are liable to have urates deposited on them when they have had their alkalinity diminished by injury or irritation, I see no reason why the fibrous walls of the intestines should not be affected in exactly the same way.

"Thus the case just quoted from Sir A. Garrod might have a causation somewhat as follows: A gouty man has some more or less acute intestinal irritation (of dyspeptic origin), causing some nausea; this caused uricacidemia; on this there unfortunately follows exposure to cold, which raises the acidity and drives the urate out of the blood again, and as in other cases a large amount of it goes into that piece of fibrous tissue which is most irritated and least alkaline, in this case the fibrous structure in the walls in the last eighteen inches of the ileum. This still further increases the irritation, acute gouty inflammation of this portion of the intestines ensues and becomes so serious as to cause death.

"I have no doubt that if after death an extract had been made of this portion of the ileum it would have been found to contain far more urate than any other portion of the intestine of the same weight, and we have seen from the case previously mentioned that the gout may go on to deposit of urate visible to the eye.

"I have recently had an opportunity of testing a piece of inflamed intestine for uric acid in the case of Alice C., age twelve, admitted under my care at the Royal Hospital for Children and Women on November 11, 1895.

"She had been suffering from appendicitis or perityphlitis for some three weeks, and this had probably gone on to local suppuration before she was seen. She was put on salicylate of soda, which was given by rectum when her stomach rejected it; but this did not produce any marked effect, and she died on the fifth day after admission, with general peritonitis.

"I am in doubt in this case whether she got enough salicylate, owing to the vomiting which was present on admission; or whether the salicylate failed because suppuration had already taken place, as in my experience it is quite useless in gouty arthritis once suppuration has set in.

"At the *post-mortem* a local abscess round the appendix was found which had burst into the general peritoneal cavity shortly before death.

"I then took a portion of the cecum with the appendix, at the seat of the local abscess, and also a portion of the colon from the opposite side of the abdomen, near the splenic flexure, and tested them for uric acid in the ordinary way.

"I found in the portion of cecum and appendix .053 grains to ounce of uric acid and xanthine, but in the splenic flexure so little that I could not feel certain that there was any at all, while in the extract of cecum the precipitate with nitrate of silver was quite visible.

"I think it probable that the pus of the local abscess would have contained more uric acid had we been able to get it, and that the inflamed intestine would have contained more earlier in the disease.

"I should lay absolutely no weight on my results in this single case, but report it here merely for the purpose of getting others to repeat my observation whenever they have a chance, either in perityphlitis or the colic produced by lead or other metals.

"Again, we have some evidence pointing in the same direction in the part of the intestine commonly affected. Why should the last eighteen inches of the ileum, or, in my experience, the cecum and lower ileum be the parts affected?

"I would suggest that the reaction of the intestinal contents has something to do with it; it is well known that those of the large intestinal have an acid reaction, and it is not improbable that the alkalinity is diminished in the small intestines before the ileo-cecal valves are reached.

"Again, Bouchard[12] has shown that in certain dyspeptic conditions, especially in dilatation of the stomach, there is an excess of acid throughout the whole intestinal canal, and such acidity may cause local irritation and thus form the starting point for a concentration of urates in the intestinal walls and an attack of gout.

"Then any local irritation due to impacted feces or foreign bodies may act in the same way, setting up a local inflammation with fall of alkalinity which is soon complicated by a concentration of urates on the irritated spot; in this way the irritation in the vermiform appendix may precipitate a local attack of gout which, as in other parts, the joints and the valves of the heart, for instance, recurs and recurs, till a more or less extensive lesion (perityphlitis) has been produced.

"I notice that recent writers on this subject generally make use of the term appendicitis; and if proof is forthcoming that the trouble generally originates in the appendix there is no objection to this. As regards its gouty or rheumatic origin, it makes no difference whether it begins in the appendix, the cecum, or the lower ileum, as in the case reported by Sir A. Garrod; the only thing that concerns us is that these portions of intestine contain fibrous tissues, upon which urates may be precipitated if their alkalinity is diminished by such things as dyspepsia, cold, or irritating substances. And the irritation so caused may recur and recur and lead on to ulceration and sloughing just as in any other fibrous tissues."

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"One swallow does not make a summer," nor does the fact of Dr. Haig having colic after a dose of calomel, and his relative recovering from a supposed typhlitis, after having taken a certain quantity of salicylate of soda, prove that either had a deposit of urate of mercury in the fibrous tissues of the intestine, which was removed by the salicylate, nor does the finding of considerable quantities of xanthine bodies in the inflamed tissues of the child Alice C. prove that there had been a gouty deposit in the fibrous walls of the intestine, for we know that adenine and guanine are normal constituents of the cell nucleus and are readily converted into hypoxanthine and xanthine respectively, during the process

[12] "Lecons sourles Auto-intoxications," p. 172.

of putrefaction, and consequently may be found in all suppurating tissues where nucleated cells are abundant; but these cases are *suggestive*, and we know it to be a fact that a deposit of urates may and does take place in the lower part of the ileum and the cecum under some circumstances, as evidenced by the cases reported by Garrod, Hayem, and others, and it is not at all improbable that such a deposit does *occasionally* cause sufficient irritation to start what may become, through infection, a fatal inflammation.

The causation of appendicitis by such a gouty deposit would naturally be expected to occur more frequently, as in the reported cases, in males after middle age, and may account for woman's relative immunity from this disease, but *only* in *just* such *measure* as is she *relatively free* from *other forms of gout.*

I have quoted these cases in detail mainly for two reasons. First, I wanted to direct your attention to the *fact* and *manner* of the occurrence of these gouty deposits, but at the same time to the fact that such *gouty deposits* do not, like *appendicitis*, belong to *early* life; and to suggest at this period of life, it is the presence of the large amount of *lymphoid* rather than fibrous tissue in the last eighteen inches of the ileum, the cecum, and the appendix that determines the frequency with which it becomes the seat of disease. Secondly, to emphasize the *unquestionable fact that no matter what the primary cause of the appendicitis may be, that neither salicylate of soda, opium, nor any other drug will restore the circulation in a disorganized appendix, prevent the leakage of intestinal contents or delay the inevitable consequences following the rupture of an encysted appendiceal abscess into the peritoneal cavity.*

The occurrence of appendicitis after violent muscular exertion has been noted by numerous writers and attributed to torsion of the appendix. In a paper read before the Kentucky State Medical Society in June, 1894, Dr. A. M. Cartledge says: "My observations, confirmed by others, that external violence from falls, blows, and contortion of the trunk may cause rotation of the appendix and twisting of its mesentery lead to another explanation of the frequency of appendicular disease in males, viz., the occupations of the two sexes." "That torsion alone by cutting off the blood supply is a cause of destructive changes in the appendix there can be no doubt. One such case, operated

upon a few hours (five) after the accident by Dr. J. S. Chenoweth, demonstrated the twisted appendix perfectly. I have seen undoubted evidence of such a condition in cases operated upon after infection and perforation."

In the discussion following this paper one member is reported as saying: "If the case be appendicitis, and you inquire into the cause, you will find there has been something in the occupation of the man that predisposes to it. To illustrate, I have had four cases within the last year, two caused by the men using a wood-saw. If a man who is not accustomed to using a buck-saw uses one vigorously, and has colic the next day, you may put it down that it is a case of appendicitis. The third case was caused by a man following a pond-scraper, and the fourth by riding a horse. Exercise is one of the points to be taken into consideration in the causation of appendicitis. If it is appendicitis, a violent exercise produces it; if it is a colic, it is imprudence in diet. I am perfectly satisfied that in following a pond-scraper, using a buck-saw, and riding horseback, the anatomical relations are such that we have in these forms of exercise an important point which may enable us to make an early diagnosis."

That the difference in the occupations of the two sexes does exert some influence upon the relative frequency of appendicitis in the sexes I take to be a fact, but I question whether it is through an increased liability to torsion of the appendix in the male. The case referred to by Dr. Cartledge, in which, five hours after the development of the acute symptoms, I found a gangrenous appendix twisted at its base, I have thought over many times in all its bearings. I believed at the time that torsion of the appendix was the primary factor in the disease process. In the light of subsequent experience and thought I question very much whether the sharp twist in the appendix was the *cause* rather than the *result* of the *necrosis*.

[TO BE CONTINUED.]

GASTRIC CARCINOMA WITH ESPECIAL REFERENCE TO BOAS' TEST.

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[Written for MATHEWS' QUARTERLY JOURNAL RECTAL AND GASTRO-INTESTINAL DISEASES.]

CASE 1. On February 28, 1896, I was called to see a German, aged forty-seven. That he was married, living in comfortable circumstances, and his occupation that of carpenter, with most of his work in-doors, afforded no explanation of his sickness, which had begun quite suddenly four months previously. Neither was there any thing significant in his habits or other matters usually inquired about. The initial symptoms were lack of appetite, belching of gas, water-brash without much actual vomiting, moderately severe pain in the epigastrium occurring irregularly and without regard to meals. Three or four days before my visit the urine had markedly diminished, so that the elimination amounted to only about 250 cubic centimeters. Catheterization showed that there was no retention. There had been constipation, and the last passage of the bowels had occurred five days previously, assisted by enema. The patient, who had weighed 180 pounds four months ago, was extremely emaciated. There was typical cachexia. Although the patient appeared to be at the point of death there was surprising muscular power. He changed his attitude in bed without assistance, and did not seem to be fatigued during quite a prolonged physical examination, and the night before he had gone from bed to chair and had walked the length of two rooms several times.

The lungs were normal except for a peculiar flat tympany in the right infraclavicular region. There was a slight cough and expectoration, ascribed to the larynx and trachea on account of hoarseness and the lack of physical signs in the chest. The heart was normal, but there was an accentuation of the second sound on the aortic side corresponding with the history of renal failure and the general circulatory stagnation. The hepatic area by auscultatory percussion was normal, but some enlarged abdominal veins suggested sclerosis. There was no ascites. The

stomach had its usual superior curve and extended two inches to the right of the median line. About half an inch above the umbilicus there was a change in the conductivity of percussion, which was taken to indicate the presence of the colon (correct), but the distinction between gastric and intestinal conductivity did not occur as usual (explained by the enlargement of the stomach below the limits of the colon).

The patient died at five o'clock the next morning. On section the stomach was found to fill almost the entire abdominal cavity except the right lower quadrant, reaching almost to the left Poupart's ligament. The colon corresponded to the band marked by auscultatory percussion. The stomach contained about three quarts of fluid, and would have held at least a quart more. The liver was slightly sclerosed. The notes of the necropsy have been lost, but the other details were not significant except that the pyloric tumor, which could be plainly felt *ante-* and *post-mortem*, was found to involve also the adjacent portion of the pancreas, but without apparently obstructing the duct.

Case 2. Judge Q., aged fifty-seven, native born but of German descent, married, was referred to me on February 24, 1896, by Dr. Marcell Hartwig, of this city. The patient gave a history of moderate dyspepsia dating back a number of years, but he had not considered himself sick till eighteen months ago. His complaint was of heartburn and the eructation of gas and a little food almost immediately after nearly every meal. Formerly the food raised had been bitter, but not recently. The bowels, now constipated, had alternated between constipation and diarrhea. There was no history of jaundice, but the patient had occasionally had piles which he had "cured" with cold water applications. The patient had been very temperate so far as liquors were concerned, but had taken large quantities of coffee. There was no emaciation; the complexion was ashy but not distinctly cachectic; the lungs and heart were normal; the spleen slightly enlarged and the liver correspondingly slightly contracted; the area by auscultatory percussion reaching from the fifth rib to the costal arch. The stomach was considerably dilated, descending one hour after a light meal almost to the level of the umbilicus and extending in a funnel-shaped projection two and a half inches to the right of the median line.

Treatment included abstinence from tea and coffee, moderate care as to diet, hydrochloric acid, cascara sagrada, and an antiseptic powder of menthol and benzo-naphthol. The diagnosis was doubtful so far as cancer was concerned, but, to be frank, I felt quite hopeful.

The twenty-four hour sample of urine measured 500 cubic centimeters, containing a heavy precipitate of urates and 17.5 grams of urea. Albumin and peptone (or rather albumose) were absent and, in spite of considerable flatulence, indican was present only in small amount. Both copper and picro-nitric acid solutions showed an apparent trace of sugar, which was either not present at all or else merely alimentary. The reduction of copper is easily explained by the well-known action of urates, but the picric acid tests are supposed to be free from this source of error.

On February 28th the stomach was emptied four hours after a meal of steak and toast. There was no acidity either by benzopurpurin—the most sensitive of the aniline colors so far as my experience is concerned—or by resorcin and sugar, a still more delicate test and reacting only to mineral acids. Sugar, but no starch, considerable acid albumin, and a very small amount of true peptone were found in the filtrate. This was the patient's first experience with the tube, and both the slow digestion and faulty mastication rendered the attempt to cleanse the stomach futile. In the contents removed was a mass resembling a plum-skin with adherent pulp, but the patient had taken no such fruit. The next noon lavage was again undertaken, the patient having fasted since supper. Undigested meat was still found and in a rotten state. After the extraction of the tube another piece of skin and pulp was vomited and was identified as part of a sausage eaten eleven or twelve days previously. On account of the extreme stagnation and fermentation, or rather putrefaction, strychnine and papoid and an additional dose of hydrochloric acid were prescribed.

March 3d, at the same time after a meal, lavage was again attempted. The seance lasted an hour, and large quantities of water were used, containing Fenton B.Turck's soap and soda. The passage of the tube in this patient was always difficult on account of an obstacle posteriorly and to one side of the pharynx. A

large quantity of stomach contents was removed, including lumps of rotten meat and a piece of sausage skin now two weeks old, a raisin seed taken in pudding over a week ago, and some mucus. This time the stomach was left in a fairly clean condition. Three days later, eighteen hours after a meal of rice-pudding with milk, coffee and pineapple juice, the last given as a digestant, a few milk curds, a moderate quantity of steak dating back several meals, and some mucus were removed. After half an hour's treatment with hot soap emulsion the outflow became perfectly clear and sweet. Menthol vapor was then introduced several times according to the writer's method published in 1892. At several subsequent appointments lavage and inflation were practiced, the fermentation being kept in check though not absolutely prevented, and delay of food in the stomach being noted up to forty-eight hours. The complexion rapidly improved as a result of cleaning the gastric cesspool, and the patient gained in strength. Hydrochloric acid caused some burning, and it was reduced to a dose of five drops of the dilute acid an hour after food.

About three weeks after the patient was first seen, rectal alimentation was tried in order to allow the stomach to return to its normal position, which it did very promptly, the lower border rising three quarters of an inch above the umbilicus within three or four days, and not sagging again during my attendance on the case. Indican had disappeared entirely from the urine beyond the normal trace, and urea had increased to 23 grams during rectal alimentation, showing that intestinal digestion was good and that the disease was practically limited to the stomach. After using the rectum for eight or ten days the patient became so hungry that food was allowed by the stomach. Raw chopped pancreas between thin slices of toast was given twice daily, with digestants and antiseptics. For two days the patient did well on this diet; then he began to vomit, and the matter suggested the presence of blood. At midnight of the second day of stomach-feeding a pint of undigested stomach contents, with some black blood, was vomited. Ergot and morphine, which had been left in anticipation of such a disaster, were immediately given, and three hours later I gave a second dose of ergot. Thirty-six hours after this hemorrhage Dr. Hartwig saw the patient with me. There had been a slight second hemorrhage. No food had been

given by the stomach. We could find no tumor, and came to the conclusion that the cancer must be diffused over the gastric wall, and that it was ulcerating. Hemoferrum was ordered, and the following prescription as a styptic, at Dr. Hartwig's suggestion :

℞ Liq. ferri subsulphatis.....15.00
Sodii bicarbonatis..... .50

Bottle after effervescence has subsided. S.: Two cubic centimeters p. r. n. for hemorrhage in 30 cubic centimeters of water.

Salol was continued, and at Dr. Hartwig's advice, farinaceous diet by the stomach was allowed.

I continued to visit the patient for about two weeks more, administering gastro-intestinal antiseptics, papoid, and emulsions of bismuth hydrate. At this time, partly on account of my unfavorable prognosis and partly because of the distance of the patient from Buffalo, the family decided to try a local physician. The patient died two or three weeks later. Members of the family informed me subsequently that a necropsy showed a large ulcerating cancer of the gastric wall, that the outlet of the stomach was not closed, and that the organ was not enlarged, corroborating our diagnosis exactly. A letter to the physician in attendance, inclosing stamped and addressed envelope, received no reply, so that I am unable to present his observations of the case. I feel, however, that he could have no objection to my reporting the case or he would have notified me to that effect.

Case 3. A Scotch woman, resident in this country from early childhood, married, aged forty, was referred to me by Dr. Thomson, of Black Rock. She had had symptoms referable to the stomach for about two years, and had been treated by another physician for dilatation of the stomach, and had learned to use the tube, sometimes practicing lavage three or four times in twenty-four hours. She described the stomach contents as usually fermented, and often of late containing clotted and fetid blood. In spite of the diagnosis of dilatation, she had never noticed food remaining in the stomach longer than over night, and she seldom introduced more than a pint and never more than a quart of water.

On physical examination heart and lungs were found normal, liver slightly contracted, extending from the fourth rib not quite to the costal arch in the nipple line. The stomach area, by pal-

pation and both ordinary and auscultatory percussion, reached at least three inches below the umbilicus, but there was not much lateral enlargement. There was a plainly palpable tumor just to the right of the umbilicus apparently of the size of an English walnut.

The patient was directed to wash out her stomach in the morning, to take no breakfast, and to report one hour after a test dinner of wheat-flour gruel. Misunderstanding directions, she washed out her stomach in the evening, took a breakfast of toast and one egg and the gruel at 2 P. M. At 3 the stomach contents were removed, the toast and egg being still visible. There was no sour odor. Free acidity was shown by benzo-purpurin, but not by Congo red, which seems to be next in sensitiveness. Gentian violet and tropaeolin did not, of course, react. The resorcin test for hydrochloric acid was negative. Small amounts of albumin and albumose and a moderate amount of peptone were found, the latter being precipitated by bichloride of mercury, there being considerable dissolved starch and a moderate amount of sugar. The urine was normal except for a marked deficiency in elimination, total solids by specific gravity being 11 grams and urea only 8 grams. There was no indican.

On May 23d, two days later, an hour and a half after a meal of wheat-flour gruel, a trace of hydrochloric acid was found. Lactic acid was found in the gruel itself after extraction with ether, so that no test was made of the stomach contents. With the idea of securing a meal free from lactic acid I asked the patient to make gruels of farina and oatmeal, carefully scalding all utensils and using nothing but boiled water. Notwithstanding these precautions both gruels contained lactic acid, or at least something that was neither maltose nor glucose, that was extracted with ether and that gave the canary-yellow reaction with ferric chlorid after evaporating to dryness in order to expel any trace of alcohol. It occurs to me that most of the reports as to the diagnostic value of the Boas lactic acid test lack the important control test of the gruel used. I should certainly have been misled in this case into supposing that I had added my mite to the support of this new method of diagnosis had it not occurred to me to test the various gruels. The presence of a trace of hydrochloric acid is also noteworthy.

My experiments would not have stopped here had it not been that the patient had consulted me with particular reference to the advisability of pylorectomy, and did not expect to remain under my care for more than a short time. The first impression of the case was favorable in spite of the tumor, but during one of the attempts at extracting the stomach contents fresh clotted blood was drawn, so that I advised against operation.

Nothing further was heard from the patient till October 12th, when Dr. Thomson invited me to the necropsy. The patient, who had weighed only eighty-three pounds in May, had emaciated to the last degree and had taken almost no nourishment for a month. The great omentum was atrophied; the stomach lay obliquely, being crowded up from its usual site by the inflated splenic flexure of the colon, while the pyloric end of the stomach lay entirely to the right of the umbilicus. The tumor was about the size of a hen's egg. That the displacement was *post-mortem* was indicated by the fact that the tumor had been moved from the place where it had been felt for some months. The liver was somewhat congested and shrunken, about as noted in May. The spleen was normal. The pylorus was patulous to the little finger, although the tumor was half an inch thick, measuring from lumen to periphery. The head of the pancreas and a few mesenteric nodes were slightly involved. The thorax was not examined. Dr. Thomson had noted during life a considerable motor power on the part of the stomach, the peristaltic wave often being visible. The gastric wall was somewhat thickened. Except for an erosion within the pylorus there were no macroscopic lesions of the mucous membrane aside from *post-mortem* softening. The patient had not suffered much from pain, but had died from exhaustion. The growth was an unusually hard scirrhus. In spite of the history of hematemesis and the withdrawal of blood through the tube, Dr. Thomson said that there had been no repetition of the bleeding.

The early diagnosis of gastric cancer is extremely important, since operation is the only means of cure. In Case 3 the patient was well aware of her trouble, and I was placed in the unpleasant position of deceiving her and urging an operation dangerous in itself and affording almost no chance of permanent relief, or of dispelling all hope. There was no way of discouraging oper-

ation and yet withholding the truth from a patient so well informed. The presence of a tumor, although a valuable diagnostic point—for non-malignant tumors of the interior of the body are rare—is at the same time usually an indication that the case has progressed too far for operation. In Case 1, the tumor had grown centripetally so as to cause dilatation. In Case 3, the dilatation was relative and not absolute; it had grown less during the advance of the malignant disease, while the muscular coat had strengthened, all this being rendered possible by the centrifugal growth of the cancer. In Case 2, the dilatation had been essentially atonic and was not mechanically due to the cancer.

The immediate cause of death in Case 1 was renal insufficiency, in the others the toxic and exhausting effects of the malignant disease. It is interesting to speculate on how far the renal disease of Case 1 depended on irritation by toxemia due to the cancer itself and to the faulty digestion and fermentation in a dilated stomach.

In all three cases there was slight sclerosis of the liver, with perceptible diminution in size in two. Hepatic sclerosis is a very common condition in patients of middle life who present dyspeptic symptoms. If there is any causal relation between the gastric cancer and the sclerosis, I am inclined to think that the former is the effect of the latter, the stomach becoming more prone both to inflammation and to malignant disease from venous congestion and the toxicity of the blood which depends on liver trouble and which is so vaguely understood.

In a patient of middle or advanced age, having severe dyspepsia—using the term in the most general sense—and considerable dilatation of the stomach, it is important to determine whether there is actual stenosis of the pylorus and whether the stenosis is of malignant nature. Case 3 had been treated up to about a year before her death by a competent physician, who considered the trouble simple dilatation, and during the first two weeks of treatment of Case 2 I was quite hopeful that a cure might be accomplished, especially when the stomach returned to its proper location. However, this was not a stenotic case. In several cases which had been diagnosed by one or more physicians as malignant a cure has apparently been achieved, the dilatation disappearing and no signs of malignant disease manifesting them-

selves. But we can not say clinically when malignant disease begins, to what degree non-malignant conditions predispose to it, nor how far a non-malignant and a cancerous disease may coexist independently.

The practical importance of a palpable tumor has, as already explained, been greatly everestimated. But the possibilities of palpation have also been exaggerated. Many men think they feel tumors which actually exist but are not palpable. Once, after the malignancy of Case 2 had been quite well established, I thought I felt a tumor at the pylorus. But I never felt it again, nor did Dr. Hartwig, nor was there any account of such a tumor *post-mortem*. The muscular resistance of the rectus muscle, divided as it is into little tumor-like bunches, plus a preconceived idea of neoplasm, may lead to a false diagnosis. I have had physicians insist that a pyloric tumor existed till they were made to feel precisely the same kind of tumor below the umbilicus and and on the left side, and I have had to convince myself in the same objective manner.

Acute pain is not a common symptom of cancer. Whatever pain there is, is dull and nagging, and typically it occurs without reference to meals. The best description of the pain of cancer is contained in a Russian novel (translated into English) entitled Ivan Iliitch.

Having been compelled to abandon the palpation test and that for acidity as early indications of gastric cancer, the profession has comparatively lately turned its attention to Boas' lactic acid test. My own simplification of the test—repeated here for the sake of eliciting criticism—is as follows: The gastric contents are shaken with ether, which may or may not contain traces of alcohol. In order to prevent the decantation of solid particles the ether is allowed to stand several minutes after separating from the lower layer and only the top part is used. This clear liquid is poured into an open dish and the ether, and alcohol if present, burned off. The watery and perhaps alcoholic solution is then evaporated at a low temperature, in order that no alcohol may possibly remain. The sediment is then redissolved in pure water and heated with a watery solution of ferric chlorid, which is a more delicate reagent than the amethyst solution with carbolic acid. Such control tests as I have made seem to prove that

this test is reliable for lactic acid, and that substances which might imitate the test are eliminated. I shall be glad, however, to be warned of any fallacy which may have been overlooked.

It may be that some of the observers who have so enthusiastically indorsed the Boas test labored under the same misapprehension as the writer, namely, that a simple cereal gruel, at least one of oatmeal, was free from lactic acid, without any particular precaution being observed in its separation. Certainly few American reports state explicitly that a control test of the gruel was made.

It seems to me that we assume a great deal in placing implicit reliance on the Boas test. Plainly stated, our assumptions are as follows:

1. Our test meal contains no preformed lactic acid. It seems evident that we can not take this for granted, but must establish it by actual test.

2. The lavage by which the examination is preceded, whatever the motor weakness of the stomach, the stagnation of its contents, or the obstruction at the pylorus, can be relied upon in non-cancerous cases, if not in cancerous, to remove all appreciable amounts of lactic acid, although the latter is practically always present in the stomach during digestion.

2 *a*. Any nurse, interne, or the patient himself can accomplish this cleansing. I believe we have already reached a serious fallacy.

3. Although lactic acid is always present in the intestine under ordinary diet and sometimes present in the blood, it can not reach the stomach after the preliminary lavage, unless perhaps in cancerous cases. The blood probably may be ignored as a possible source of lactic acid in the stomach; but, considering the ease with which bile is aspirated into the stomach during lavage or vomiting, we can hardly overlook this source of error.

4. Although lactic acid is formed from carbohydrates and perhaps from proteids—it certainly is contained in many proteid foods—by the action of several if not many different microorganisms (Turck), our preliminary lavage with plain water, or, at most a feeble antiseptic, is sufficient to render the stomach free from all such germs, unless, perhaps, the condition is of cancerous nature. This is something that few bacteriologists would admit.

5. Cancer either is directly connected with the development of one or more forms of lactic-acid-producing bacteria, or it indirectly but still almost invariably favors their development. This action is shared by practically all cancers of the stomach, whether ulcerative or not; it is not characteristic of any other form of gastric disease, however severe or however prone to fermentative processes; neither is it shared by cancers of, say, the liver, or other adjacent organs. Here, again, we have reached a declaration which scarcely appeals to our judgment.

Yet the man who asserts that the formation of lactic acid is clinically characteristic of cancer of the stomach and of no other gastric disease, of gastric carcinoma and not of heptic carcinoma, asserts by implication all of these five corrollaries.

I have already pointed out, in a paper presented to the N. Y. State Medical Association, the probability that the connection between cancer and lactic acid is due to the failure of the natural antiseptic secretion of the stomach, hydrochloric acid. My prediction that lactic acid would not be found in gastric cancer when the hydrochloric acid remained has been amply verified by observations of Oppler, working in Boas' clinic. I have already found several cases which yielded the lactic acid test and which proved to be non-malignant, but I do not wish to report them, as the test gruel was not examined, so that a fallacy may exist. Several other observers have reported such cases, and I have no right to suppose that they made this careless omission.

Finally, I believe that we shall have to conclude that the Boas test is simply a roundabout way of examining as to the hydrochloric acidity of the stomach; that is no more and no less "pathognomonic" of cancer than the test for hydrochloric acid. Furthermore, we need not expect the secretion of hydrochloric acid to be stopped by cancer till the disease has actually accomplished something—in other words, till the advisability of operation is already doubtful.

Abstracts and Selections.

ON THE ANATOMY OF THE ANUS.

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[*From Annals of Surgery, July*, 1896.]

In March, 1895, Dr. Robert T. Morris, of New York City, gave me some papillæ obtained from just within a human anus, and asked me to determine the character of the nerves therein. The interpretation of the results obtained necessitated a study of the anal region in man and some other mammals.

Historical. The occasional existence of papillæ in the human rectum has been long known. By many physicians they are considered pathologic, and the cause of diseased conditions which are accompanied by various reflex nervous disturbances and general interference with the digestive functions. Some surgeons on general principles practice their indiscriminate removal. Numerous theories have been advanced regarding their cause and development, but, so far as I am aware, they have never been the object of scientific study. In 1895 *Andrews (p. 303), in discussing the disastrous results which frequently follow a common operation for hemorrhoids where the terminal two to three centimeters of the rectal epithelium are entirely removed (Whitehead's, or the so-called American operation for hemorrhoids), says: "The mucous membrane has a peculiar mechanism, constituting it a tactile organ, which is the seat of a very acute special sense by which a healthy person is warned of the presence and downward progress of the fecal mass. Its nerves possess remarkable reflex powers over the sphincters, so that they resist the unexpected escape of contents without constant mental attention. Just below the columns of Morgagni are about eight small papillæ. Each one has an artery and a nerve. Under its base is a little ganglionic enlargement of the nerve. They are important tactile organs connected with the special rectal sense."

*Mathews' Medical Quarterly.

Methods and Material. The methods employed may be stated as follows:

I. Gross anatomy. A study of the anal region in the rabbit, dog, cat, monkeys, several specimens, the anthropoid apes, and man. Five apes were examined, viz., Orang, two adult females and one young female chimpanzee, young female and one young male gorilla; also five monkeys. The human material comprised ten fetuses at or near term, one child fifteen months old, and two adult human rectums.

II. Several clinical demonstrations.

III. The histologic study:

(*a*) Of serial sections of papillæ fixed in the following mixture, which has been recommended by Dr. P. A. Fish—

95 per cent. alcohol	500 cc.;
Water	500 cc;
Glacial acetic acid	5 cc.;
Mercuric chloride	5 grms.;
Picric acid	1 grm.

The tissue is to be fixed twelve to twenty-four hours, then $HgCl_2$ and picric alcohol washed out in 50- and 70-per-cent. alcohol; then put into 80- and 95-per-cent. alcohol, twelve to twenty-four hours in each, and embedded in collodion. For staining sections there were used hematoxylin, fuchsin, Weigert's hematoxylin, and an original method which the writer is not quite ready to publish.

(*b*) Both of Golgi's methods—silver and gold. The gold method gave fairly good results, but the silver method was unsatisfactory.

(*c*) The gold chloride method.

(*d*) Fresh tissue was macerated in Haller's fluid, teased with needles, stained on the slide with fuchsin, and mounted in glycerin. These preparations showed ganglion cells and nerve fibers well.

(*e*) Sagittal sections of an adult human anus.

Comparative Anatomy. The anal orifice may be described as the contracted opening of an approximately pear-shaped bag. The natural tendency of the sphincter muscles is always to contract and keep it closed without the intervention of the will. This supervision is brought about through the agency of a deli-

cate specialized nervous mechanism, (*a*) central in the lumbar enlargement of the myel; (*b*) peripheral, in and under the lining epithelium just within the anal orifice.

In all the mammals examined, including man, the general structural plan is the same. The transition between skin and mucosa is a narrow zone of stratified epithelium three to nine millimeters wide. Its general form may be compared to a comb or a saw with irregular teeth. Hence the term *pecten* (Latin, pecten, a comb,) is suggested to designate it. The dentations of the pecten interdigitate with corresponding ones of the mucosa. (See Fig. 1.)

The mucosa cephalad of the line of junction is thrown into a series of folds. The appearance is something like that of a ruffle stitched to a scalloped band; or, perhaps, like fluted trimming. The folds can not be entirely obliterated by dilatation of the orifice. These folds are commonly called *Morgagni's columns*, and the depressions between them *sacculi Horneri*.

It is of interest to note that the region is most completely differentiated in man. It is well developed in the anthropoid apes. Among the lower animals it is most perfect in the cat and dog. In the latter the sacculi Horneri are particularly large.

Characters of the Pecten. The pecten is distinguished by the following features:

(1) It is bounded caudad (ectad) by the line of junction of the ectal and ental sphincters (Hilton's white line), and cephalad by the linea dentata.

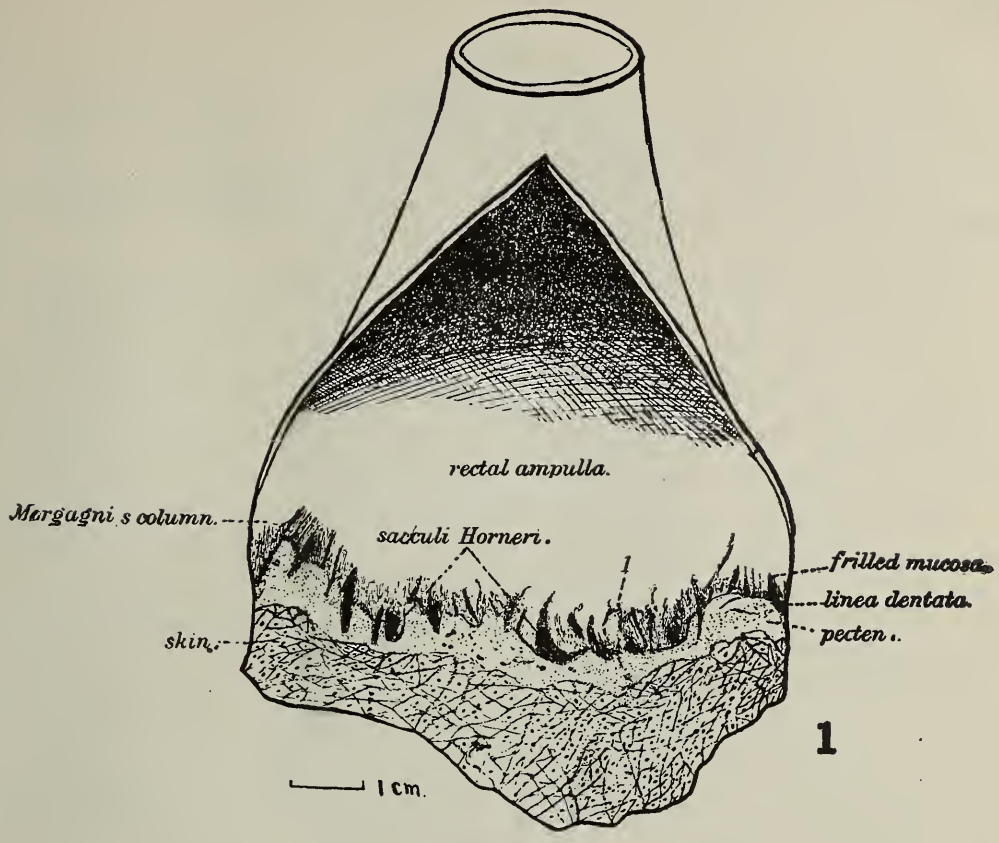
(2) It has a smooth, even texture and a glossy, shining appearance. The color is intermediate between those of mucosa and skin.

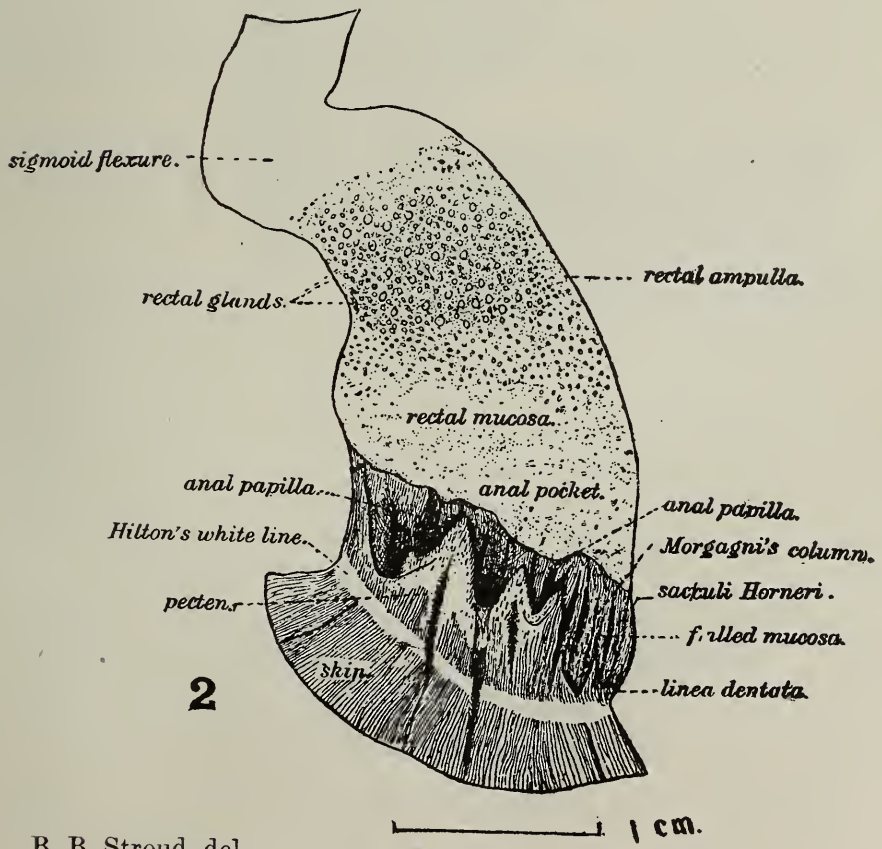
(3) It has few or no openings of sweat-glands.

(4) It is moderately vascular.

(5) It is covered by a stratified epithelium which is richly supplied with nerve endings.

(6) The cephalic dentations vary in size from two to twelve millimeters wide and three to nine millimeters long; and in appearance from broad, truncated, round, or pyramidal to slender columnar. Sometimes they present a slender neck and are expanded cephalad to a more or less bulb-like extremity. It is probable that in some cases these develop into papillæ.





B. B. Stroud, del.

PLATE I.

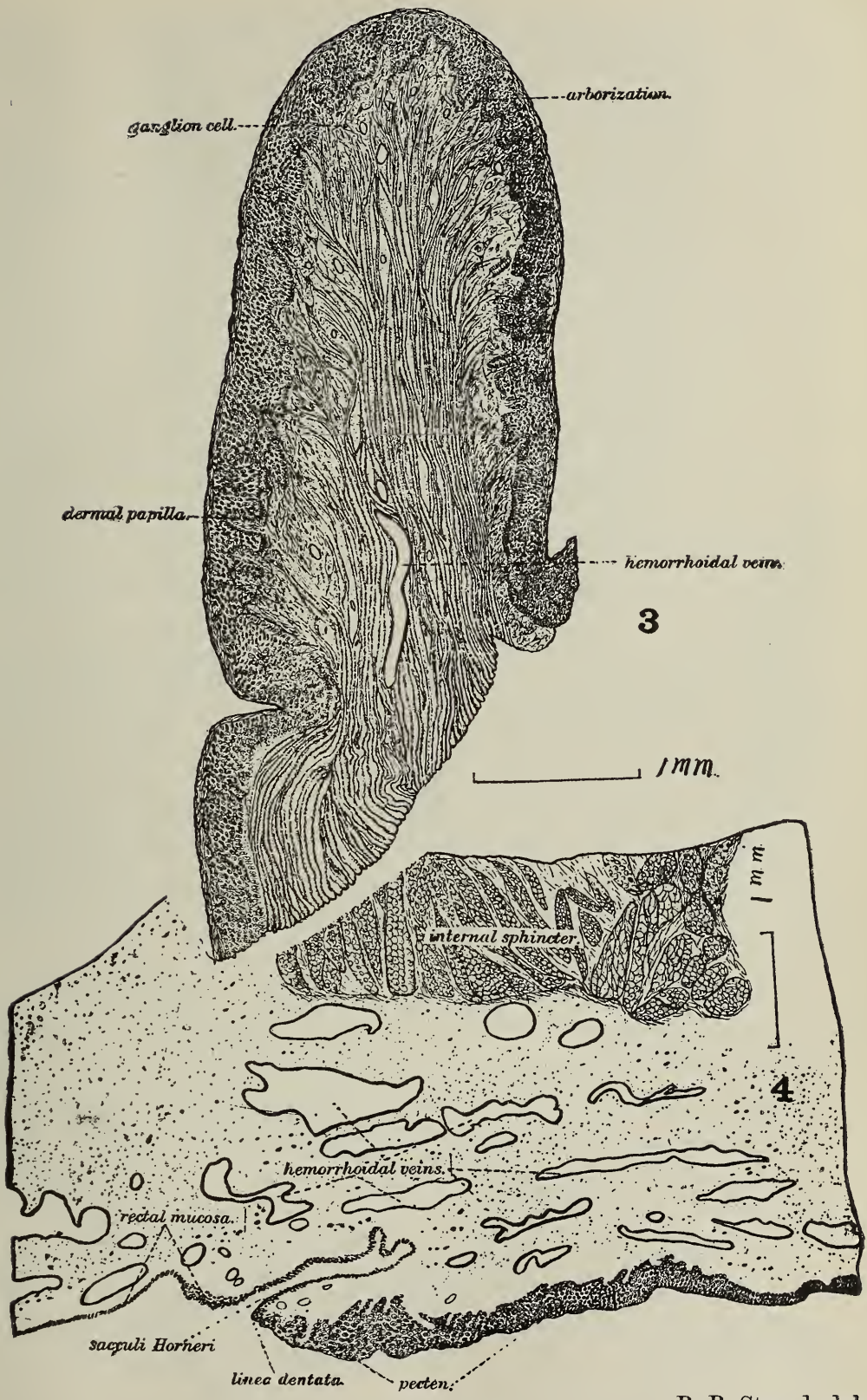
(7) The dentations are normally thrown into corrugations by the action of the sphincter muscles. Their surface is slightly more elevated than the surface of the adjoining mucosa. If I understand Andrews correctly, these are the papillæ of which he speaks.

When the orifice is closed the pecten forms the central part of the floor of the pear-shaped rectal ampulla and is directly apposed to the descending fecal mass. It is only reasonable to suppose that it should be the seat of special sense-organs whose function is to regulate the movements of the sphincter muscles.

The Frilled Mucosa. The intervals between the folds of mucosa (Morgagni's columns) form a series of indentations or little sacculi (sacculi Horneri) placed radially in the rectal wall just cephalad of the pecten. The caudal end is usually a blind pouch (See Fig. 4, Pl. II), but in some cases there is no pouch at all. The cephalic (upper) end is freely open. The depth and extent of the individual depressions vary considerably. It has been suggested that their use is to hold a reserve of mucus for lubricating the fecal mass, but their size does not seem to warrant such a conclusion. The writer would suggest that they are simply the mechanical result of constricting the wide rectal tube to its small ectal orifice.

The epithelium covering this region is simple and composed of small oval or fusiform cells placed close together. It shows a striking contrast to the epithelium of the pecten.

Anal Papillæ. In a small percentage of human individuals there are developed from either the tips or the faces of the pectineal dentations papillæ which project cephalo-entad into the lumen of the rectum. (See Fig. 2, Pl. I.) Fig. 1, 1, shows a small dentation which is almost a papilla. They vary in size from short and narrow or blunt and wide to long cylindric cones. The tip is sometimes enlarged to form a bulb. Being developed from the pecten, they are covered by a similar epithelium. The dermis appears to consist chiefly of nerve fibers, ganglion cells, and a minimum of connective tissue elements. They are to be considered as an anomaly of moderately frequent occurrence. So far as I have been able to determine they are peculiar to man. I consider them to be accessory sense organs of a higher degree of development than the major part of the pecten and not pathologic outgrowths.



B. B. Stroud, del.

PLATE II.

Anal Pockets. The pectineal dentations are not usually equally developed. But in rare instances two large ones adjoin, and the depression between them is a large foliated sac or pocket. The walls of this pocket contain numerous sacculi Horneri. The outer side of the pocket is formed by a substantial fold of epithelium which unites the two dentations. In the cases examined each terminated in a well-marked papilla. (See Fig. 2.) The fold has the appearance of a valve, which, if it were sufficiently developed, might be of service in helping to retain the feces under unfavorable conditions. This, so far as I have been able to determine, is a human peculiarity and not constant. It also, like the papillæ, has been described as pathologic.

Considering these facts, a question naturally arises, Is not nature in the process of evolving for man additional organs for his convenience and safeguard? A careful compilation of statistics at intervals, of say each generation, would throw light on this question.

Histology. The histologic examination has been chiefly confined to a study of the nerve elements. The greatest difficulty was experienced in staining the nerve elements. They certainly are good examples of chromophobic nerve-cells.

The Epithelium. The epithelium of the pecten and papillæ is thick and stratified. Three distinct zones can be distinguished.

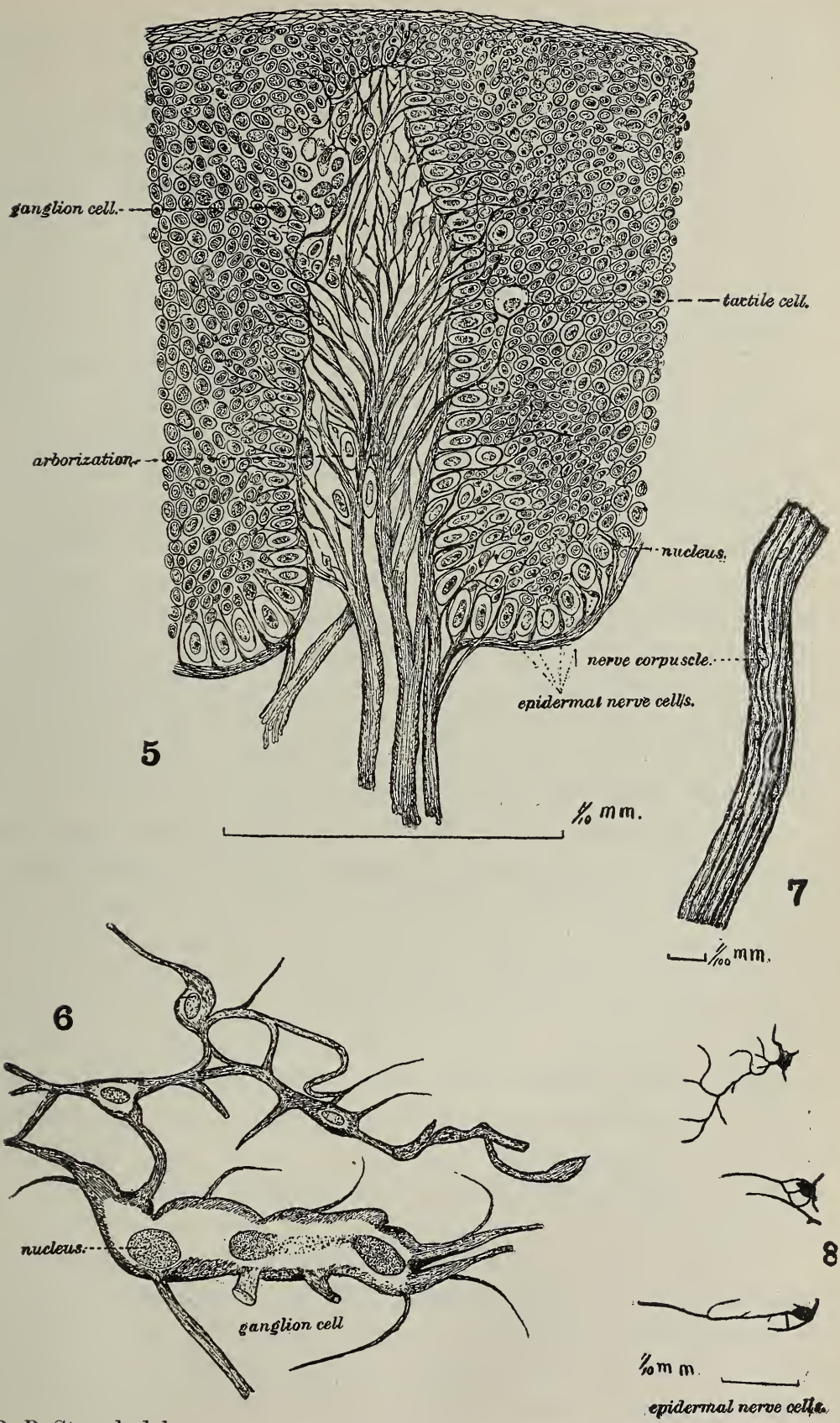
(1) The zone of large columnar or oval cells. Most ental have a large nucleus, a well-defined nucleolus, and a narrow zone of cytoplasm.

(2) The middle zone of large plump cells embedded in a homogeneous matrix which stains less deeply than the cells. This zone forms the great mass of the epidermis (see Figs. 3 and 5); the cells have a large amount of cytoplasm.

(3) A thinner ectal zone of flattened tetragonal cells lying in the meshes of a homogeneous, horny stroma. These cells have a small nucleus and a large hyaline cell body.

The dermis is composed of a loose areolar tissue, which forms a supporting matrix for blood-vessels, and a perplexing net-work of amyelinic nerve fibers, fibrils, and small to giant ganglion cells[1]. The ectal surface is thrown into a large number of eleva-

[1] Much as I would prefer a mononym for *nerve cell* or *ganglion cell*, in the present unsettled state of opinion among neurologists it seems best in this paper to employ the old familiar terms.



B. B. Stroud, del.

PLATE III.

tions like the ordinary dermal papillæ. The dermis is moulded over them.

Nerve Elements. Of these there can be distinguished:

(1) The epidermal plexus, composed of small nerve cells, from whose peripheral ends dendrites arise, anastomose with dendrites from other cells, and end in the middle epidermal zone.

(2) The dermal plexus, composed of large and small ganglion cells which anastomose freely.

(3) Amyelinic nerve fibers, coarse trunks, five to fourteen microns in diameter. They anastomose freely. Two peculiarities in their mode of distribution were noticed: (*a*) The extension of a trunk into the base of a dermal papilla, where the individual fibrils separate in a fan- or arbor-like expansion to unite with (1) the dermal ganglion cells, (2) the epidermal nerve cells, or (3) to penetrate directly to their termination among the cells of the middle epidermal zone. (See Fig. 5.) (*b*) Certain fibers, instead of distributing their component fibrils, as in (*a*), are interposed between the dermis and epidermis, that is, it is an interdermal fiber. (See Fig. 5, Pl. III.) It gives off short fibrils to the adjacent epidermal nerve cells. In some cases the nerve-cells appear to be sessile upon the fiber.

The Ganglion Cells of the Dermis. Embedded in the ectal region of the dermis are numerous multipolar ganglion cells. Their form varies from triangular, subtetragonal to huge elongated subcylindric bodies. In size they vary from twenty-one to one hundred and nine microns long and six to eleven microns wide. They show best in macerated preparations, teased and mounted in glycerin. They anastomose freely, usually by means of large, coarse fibers. From the surface of the cells and the larger processes there arise, at irregular intervals, numerous fine hair-like processes whose destinations have not yet been determined. These nerve elements are probably derived from Meissner's plexus.

The Epidermal Plexus. On account of its location the term *epidermal plexus* is suggested to designate a series of small anastomosing cells, apparently nervous, which are found chiefly wedged in between the cells of the ental layer of the epidermis; although some of them are frequently found entad and also ectad

of this layer. Their form would seem to be modified by pressure from adjacent cells. It varies from oval, pyramidal to triangular and fusiform.

They vary in size from ten to one hundred and sixty-five microns long and six to seven microns wide. Their long axis is usually ento-ectad or at right angles to the mucosa; but sometimes it is parallel with the surface. Dendrites, which frequently anastomose at a short distance from the cell with similar dendrites from adjoining cells, arise from the peripheral end. (See Figs. 5, 8.) They extend peripheral, often branching, dichotomously and end freely among the cells of the middle epidermal zone. In some cases the end is dilated into a bulb-like enlargement. (See Fig. 5.) These cells and their branching dendrites remind one of the Purkinje cells of the cerebellum. (See Fig. 8.) The results for the ultimate terminations were not so satisfactory as might be desired.

A short neurite leaves the ental (central) end of the cell and soon joins one of the interdermal fibers. In a few cases fibers were observed which appeared to end in tactile cells.

The source of these epidermal nerve cells is in doubt; but from anatomic and clinical observations it seems probable that their destination is the lumbar region of the myel, or, perhaps indirectly, the psychic centers in the brain.

Physiology. The following statements are based upon the works of Foster ('95, p. 382), Kelsey ('90, pp. 10, 11), and Quain ('96, p. 117).

The Nerve Supply of the Anus. The rectum and anus are richly supplied with nerves from both the central and the sympathetic nervous systems.

(A) The sympathetic branches from the mesenteric and hypogastric plexuses.

(B) The central.

(*a*) The third and fourth sacral nerves supply visceral branches to all the pelvic organs and anastomose with the branches from the sympathetic.

(*b*) The caudal hemorrhoidal branch of the pudic nerve supplies the caudal end of the rectum, the ectal sphincter, and the skin of the anus (pecten?). Dorsal branches from the sacral nerves also supply the skin around the anus.

(*c*) From the ental pudic a dorsal branch from the ectal perineal nerve supplies the skin ventrad of the anus, the ventral branch gives off fibers to the levator ani.

Experiments have shown (Foster, '95, p. 382,) that the tonic contraction of the sphincters is controlled in part by a nerve center located in the lumbar enlargement of the myel. Yet the sphincter may be relaxed or its tonic contraction increased by local stimulation or by influence of the emotions or of the will. It further appears that a certain amount of control over the sphincter may be exercised by the sympathetic nervous system. (Gowers, '77, p. 77.)

Reflexes. Much interest is naturally attracted to the subject of reflex nervous disturbance in general, and particularly to those associated with rectal disorders. Their existence is undeniable, but the cause is not always apparent. It has been shown that the anus is the seat of a complex and highly specialized sense-organ. This almost incomprehensible nervous apparatus furnishes the anatomic basis for all sorts of nervous reflexes; it still remains to demonstrate a sufficient exciting cause.

If we recall the fact that these delicate nerve elements, together with a multitude of small blood-vessels, are inclosed in a rather firm, supporting tissue, the dermis (see Fig. 4, Pl. II), and that a congestion of these blood-vessels will bring an unnatural pressure, proportional to the amount of congestion, upon these nerve elements, one cause for disturbance is revealed. In the writer's judgment this may be a sufficient cause for very grave symptoms.

Acknowledgments. To Professors B. G. Wilder and S. H. Gage, of the Anatomical Department of Cornell University, I am under deep obligations for suggestions and helpful criticism and for the use of the best anthropoid ape material. The human material has been kindly supplied by Dr. Morris and Mr. Paul M. Pilcher.

Summary.

(1) The anus presents a general similarity of structure among mammals, but certain features are most highly developed in man, with approximations in the anthropoid apes and in the domestic cat and dog. The *sacculi Horneri* are especially large in the dog.

(2) The transitional epithelium between skin and rectal

mucosa is a narrow zone of thick, stratified epithelium, the pecten containing nerve elements which the writer believes to be the peripheral ends of nerves concerned with a special rectal sense. This zone varies in width from about three to nine millimeters. Its caudal border is about at the junction of the ectal and ental sphincters. The cephalic (upper) border is demarkated by the linea dentata.

(3) From the dentations of the pecten in some human individuals there are developed papillæ, composed chiefly of stratified epithelium, nerve elements, and a minimum amount of connective tissue. These are believed to be important additions to the "rectal-sense" apparatus, and to make the possessor physiologically superior to those individuals who have no papillæ.

(4) There are also developed in some human individuals more or less extensive anal pockets just cephalo-peripherad of the pecten. Sacculi Horneri are found in their walls. In the cases observed a papilla was located on each side of the pocket. Papillæ and pockets can not be considered pathologic, since both were found in a child fifteen months old.

(5) When the sphincters are closed the pecten forms the central part of the floor of the rectal ampulla. And from Andrews' ('95, p. 303,) description of Whitehead's operation for hemorrhoids, I judge that the pecten is excised in this operation. Perhaps this fact accounts for the large percentage of incontinence of feces resulting from this operation.

(6) The caudal border of the rectal mucosa is at the linea dentata. The character of the epithelium is seen to change markedly here. (See Fig. 4, Pl. II.) And the mucosa is thrown into folds like a ruffle.

(7) Clinical observations tend to show that there are few sensory nerve elements in the rectal mucosa, since serious injuries may be inflicted, or the gravest diseases, such as ulceration or cancer, may exist without causing pain. (Kelsey, '90, p. 24.)

(8) Among the nerve elements present may be mentioned—

(*a*) Small nerve cells with anastomosing dendrites which form the epidermal plexus.

(*b*) Large ganglion cells in the dermis.

(*c*) Amyelinic nerve fibers. In the sections examined all appeared to be normal.

(9) The nerve supply of the rectum and anus is derived from both the neuron (central nervous system) and the sympathetic nervous system.

(10) The writer suggests that some rectal reflexes may be due to pressure upon the nerve elements, caused by congestion of the blood-vessels in this region. (See Fig. 4, Pl. II.)

Clinical observations appear to indicate that reflexes may also be caused by pressure upon irritated papillæ from spasm of the sphincter.

(11) Pockets may be torn by hard feces, causing a laceration of the pecten. Continued irritation and even ulceration frequently result. Some idea of the nerve terminations exposed may be obtained from Figs. 3, 4, and 5.

(12) Small hardened lumps of feces may lodge in a pocket and cause perforation of its floor, or even a fistula.

(13) Irritated papillæ are often injected with serum.

(14) No evidence of sclerosis was found in any of the papillæ examined.

DESCRIPTION OF PLATES.

Plate I.

Fig. 1 shows the ental aspect of an adult human anus, No. 3439, Museum of Cornell University. The specimen was hardened in alcohol, slit open, and the sides reflected. Shows the general relation of the skin, pecten, frilled mucosa, Morgagni's columns, and the sacculi Horneri. In the skin are seen the openings of numerous sweat glands.

1 is a dentation, which, if it were large enough, would be a papilla.

The linea dentata marks the serrated cephalic (upper) border of the pecten, and also the caudal limit of the rectal mucosa. The other features need no further comment.

Fig. 2—the rectum of a female child, fifteen months old, No. 2672, Museum of Cornell University—shows the general anatomy of the rectum and anus. There are two well-developed anal papillæ, and between them there is a large anal pocket.

Plate II.

Fig. 3 is a longisection of an anal papilla from an adult male mulatto. It shows—

1. General structure and arrangement of the nerve elements, blood-vessels, etc., in anal papillæ.
2. A dermal papilla.
3. The three layers of the epidermis.
4. Ganglion cells.
5. The arborescent branching of nerve fibers in passing to their destination in the epidermis. (Compare with Fig. 5, Pl. III.)

Fig. 4 is a sagittal section through a human anus. The patient suffered from external hemorrhoids. Note the dilated blood-vessels. It shows—

1. The ental sphincter transected.
2. The thick epithelium of the pecten.
3. The change in character of the epithelium at the linea dentata from thick stratified upon the pecten to thin and simple within the rectum. Rectal mucosa (Fig. 4) should read, rectal epithelium.
4. The caudal extension of a sacculus of Horner behind the pecten. The depth varies. In some cases there is no recess behind the pecten.
5. Indentations of the ental zone of the pectineal epithelium which represent dermal papillæ.

PLATE III.

Fig. 5. Section of a papilla to show the terminal arborization and ultimate distribution of the nerve fibers. (Compare *arborization*, Fig. 3, Pl. II.) The section was outlined with a camera lucida and studied with a Zeiss two-millimeter apochromatic oil immersion objective. The details were added free-hand. It shows two kinds of fibers—

(*a*) Those which break up fan-like into many fibers.

(*b*) Those which run just entad of the epidermis (interdermal fibers) to join cells of the epidermal plexus.

(*c*) The epidermal nerve cells and their dendrites.

(*d*) A tactile cell.

(*e*) The ultimate branching of dendrites. Some appear to end in small bulb-like enlargements.

Fig. 6. Four ganglion cells from a papilla macerated in Haller's fluid, teased with needles, stained with fuchsin, and mounted in glycerin. Drawn free-hand, very highly magnified.

Fig. 7. An amylenic nerve trunk from the same preparation as Fig. 6. Outlined with the camera lucida, details added free-hand. The trunk is seen to contain six fibrils.

Fig. 8. Epidermal nerve cells and their dendrites as seen in a preparation stained according to Golgi's gold method.

THE SURGICAL RELIEF OF OBSTRUCTION OF THE COMMON DUCT BY CALCULI.

BY HENRY O. MARCY, M. D.,
BOSTON, MASS.

[*Author's Abstract.*]

At a recent meeting of the New York State Medical Society Dr. Marcy read a paper with the above title.

He gave a review of his special studies upon biliary obstruction, which commenced in 1876, with detailed reports of cases occurring in 1880 and 1881, where he urgently advised operative

procedures for the relief of conditions which seemed otherwise necessarily to end in death. Post-mortem examinations showed that the cause of the obstruction was a biliary calculus lodged in the common duct.

Operative interference was refused, since it was the agreement of the consultants that the obstruction very probably was in the common duct, and that there was no record of any surgical procedures having ever been attempted for the removal of calculi from it. Autopsies showed that removal not only would have been possible, but that the conditions were such that it would not have been especially difficult.

Dr. Marcy's first case of operation occurred in July, 1887, and although not successful in the removal of the calculus, because of intestinal adhesions, the stone was dislodged and the patient recovered, followed by a short period of relief. Later the autopsy showed that the calculus was in the common duct, with a limited range of movement. Afterward Dr. Marcy criticised his operation, believing that the duct might have been opened and the calculus removed, followed by immediate suture of the wound in the duct, with a reasonable degree of safety.

He gives a detailed history of his first case of successful operation for the removal of a calculus from the common duct, October 26, 1889. Here the stone was so firmly imbedded that the backward pressure of the bile through the cystic duct had caused the gall-bladder to become so enormously distended that its contents measured ten ounces. Other methods of removal having failed, the gall-bladder was divided with scissors through its cystic portion until the calculus was reached and removed. This was nearly spherical, the size of a large filbert, and weighed when dry fifty-nine grains.

The entire wound in the viscus measured four inches. It was immediately closed with fine tendon, continuous sutures in three layers, the first including the mucous membrane, the second the entire wall, while the third was taken from side to side as a parallel suture, which when drawn upon evenly intrafolded the peritoneum over the wound, itself completely hidden from sight.

The abdominal wall was also closed in layers with continuous tendon sutures and sealed with iodoform collodion without

drainage. The patient made an easy, uninterrupted recovery, and the resulting conditions were recently noted after a careful examination. Dr. Marcy's first contribution upon this subject was read at the meeting of the American Medical Association in Nashville in May, 1890.

He reports his subsequent experiences as satisfactory, and gives his approval of surgical measures for the relief of biliary obstruction in wisely selected cases.

Dr. Marcy lays claim to having first attempted the operation and operating successfully for the removal of a biliary calculus lodged in the common duct. Courvoirsier, to whom the credit of the first operation has been given by one writer, first operated on January 22, 1890.

A CASE OF GASTROSTOMY, PERFORMED ACCORDING TO KADER'S METHOD.

BY WILY MEYER, M. D.,
NEW YORK CITY.

[*New York Medical Journal.*]

After a brief review of an article in the *Centralblatt für Chirurgie* by Dr. Broinslaw Kader, assistant to the surgical clinic of Prof. Mikulicz, the following description of the operation is given: An incision three by four inches (seven by ten centimeters) long is made, penetrating skin and fascia, and parallel with the border of the left ribs, one and a half by two fingers' width distant from the same. (In a foot-note Kader states that the simpler vertical incision might also be used. I think this should be done in every instance.) A blunt division of the left rectus muscle is made for a distance of about two and a half by three inches (six to eight centimeters). The posterior sheath of the rectus muscle and the peritoneum are incised. Now a small fold of the stomach is pulled forward in the usual way, with the help of the fingers or of the forceps, or of two slings of silk which have primarily been put through the serous and muscular coats of its wall, the wound meanwhile being held apart by blunt retractors. If the stomach is movable, the fold is of course drawn in front of the abdominal wall, the surrounding field

being packed with aseptic gauze in order to do the following steps of the operation extraperitoneally. Then a small incision is primarily made between the two slings, and a drainage-tube of about a pencil's size introduced into the stomach for a distance of about two by two and a half inches (five by six centimeters). The few spurting arteries of the gastric wall are, as usually, ligated with fine silk or catgut. So far the procedure is the same as in Witzel's method. The drainage-tube is at once fastened to the side of the stomach wound by a catgut stitch. (Fig. 1, *a*.) Then two Lembert sutures (Fig. 1, *b*,) are put on

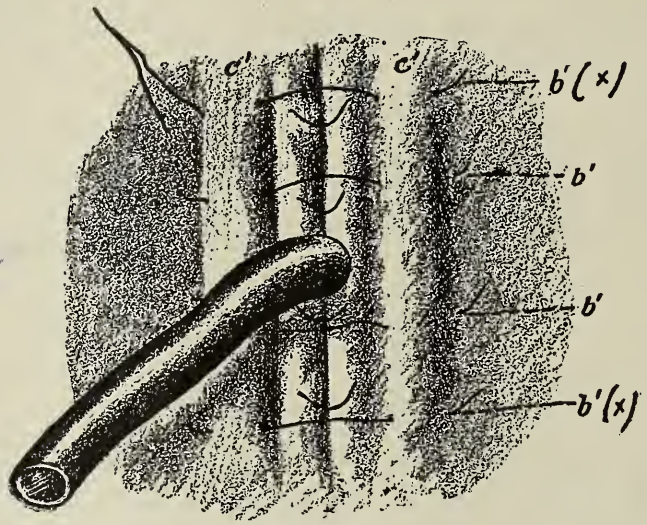


Fig. 1.

either side of the tube in such a way that they catch and unite a portion of the surface of the stomach of about half an inch (one centimeter) width, leaving between a groove of three fourths of an inch (two centimeters) width. (See Fig. 1.) The two sutures on either side are about half an inch (one by one and a half centimeters) apart. By tying these sutures ("deep occlusion sutures"), which of course catch the serosa and the underlying muscularis, two longitudinal folds are formed (Fig. 1, *c*), which turn inward the wall of the stomach in the immediate neighborhood of the tube and thus surround the latter in the shape of a narrow funnel. (Fig. 1, *d*.) Thus the drainage-tube is situated in a canal lined by serous membrane, which does not pass the gastric wall obliquely but enters it in a *perpendicular, straight way*. In order to lengthen this canal two more of the folds of the stomach are

stitched on top of the first ones (Fig. 2, *c'*) in the same manner and direction as described before, again with the help of four sutures, two on either side of the tube ("superficial occlusion sutures," Fig. 2, *b*). The outer threads of these sutures (marked *x* in Figs. 1 and 2) are not cut short, but are left long in order to have a good hold on the stomach during the further manipulations. Now the entire area of the stomach is stitched to the edges of the peritoneal wound and that of the posterior sheath of the rectus muscle, thus rendering the operating field extraperitoneal. Then the bluntly divided rectus muscle is drawn together with the help of a few stitches, the anterior sheath of

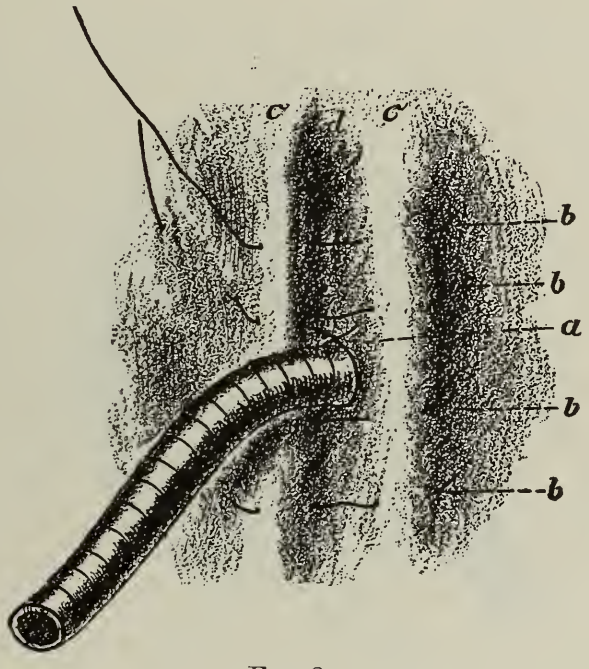


FIG. 2.

the rectus muscle sutured, and the skin closed on either side of the tube by stitches.

If wanted, feeding through the tube can be begun at once.

In establishing the fistula one has, of course, to look out that those sutures which are put in nearest the drainage-tube are put in neither too far away nor too near the same. The stomach wall must surround the tube in rather gentle tension. If the stomach can not be well pulled forward into the wound, Kader advises that the deep occlusion sutures be put in primarily, and that with the help of these the stomach be drawn up against

the abdominal wall in order to close off the peritoneal cavity when the incision into the stomach is made.

In case there is a malignant stricture of the esophagus very near the cardia this may not be feasible, it being necessary to carefully surround the field of operation inside the abdomen with aseptic gauze sponges, and to open the stomach within the abdominal cavity.

Kader mentions that the folds (Fig. 1, *c*, and Fig. 2, *c'*) can be made in a perpendicular as well as in a transverse direction.

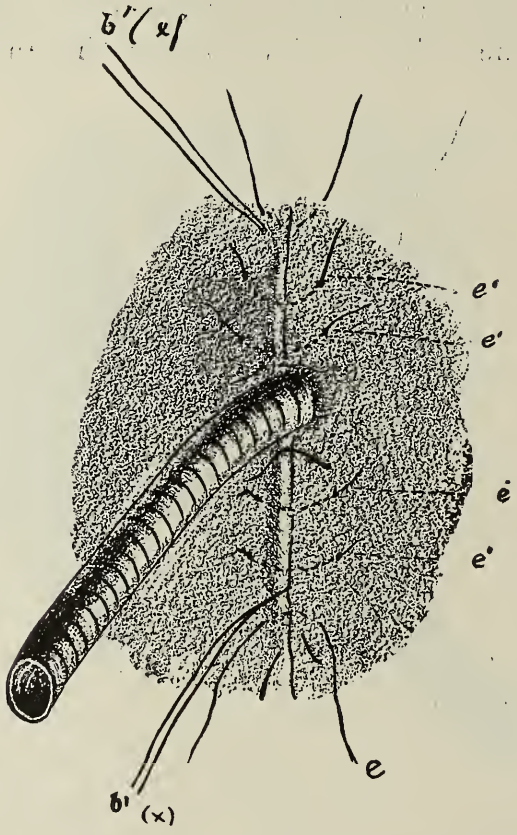


Fig. 3.

The former is preferable in cases where we want to establish a permanent fistula, as in cancerous stricture of the esophagus; the latter in benign, cicatricial ones. The canal has a greater mobility in the direction toward the cardia if the folds are put in the transverse direction. This mobility will enable us to reach the cardia easier, and thus more readily carry out retrograde dilatation, etc.

If it should become necessary to open the stomach by a larger incision primarily, in order to explore its interior with the finger,

this wound is closed by Lembert's sutures up to the spot where the tube is made to enter. Thence the operation is carried out as described above.

It is of the greatest importance to have the field of operation on the stomach well lined with peritoneum; in other words, to fix the stomach firmly to the parietal peritoneum. Kader seems to do this, according to his diagram (Fig. 3, *e'*), by sutures, where the thread passed the posterior sheath of the rectus muscle and peritoneum on the one side, then through the stomach wall, and again through the peritoneum and the posterior sheath of the rectus on the other side. This last step in the operation may be done in the following manner: Passing a silkworm-gut suture on either end of the field of operation through the entire abdominal wall, grasping on its way the stomach wall. (Fig 3, *e.*)

These sutures are tied only at the end of the operation, when the skin wound is closed with silkworm gut. They hold the stomach firmly up to the abdominal parietes. I then also stitched the fascia, plus peritoneum, around the line *e e* (Fig. 3) with a running catgut suture.

With reference to the after-treatment not much can be said. From about the third to the fifth day after the operation the catgut stitch which fastened the tube to the side of the small stomach wound (Fig. 1, *a*,) will have been reabsorbed. Then the tube must be pierced by a safety pin in front of the dressings and attached to the latter (Kader), or better, I believe, as I have advised (*loc. cit.*), by slipping over the tube down to the abdominal wall a short piece of the next larger size of tubing armed with two safety pins. A piece of gauze, partly incised, is pushed underneath the pins, another one with a small center hole on top. Both are held in place by the rubber adhesive plaster straps, as used for laparotomy, or by a square piece of muslin with a small center hole and one or two long pieces of tape on either side, which pass around the body and are tied by the patient in front. Once a week, or oftener if desired, the tube is changed to be cleansed. It must be remembered that it should not be left out for any length of time. The fistula established according to Kader's method, as well as that of Witzel's, "closes spontaneously," or after superficial cauterization, as soon as the tube is permanently removed.

The sphincter-like action of the rectus muscle, surrounding the tube on its way to the surface of the abdomen, deserves mention as an agent in rendering the fistula water-tight. At last, it is most probable that the fibers of the muscularis of the stomach, which surround the fistula in Kader's method in a double layer, act like a sphincter. Kader emphasizes that these same causes are underlying the good functional results obtained by Witzel's method; in other words, that it is not the oblique penetration of

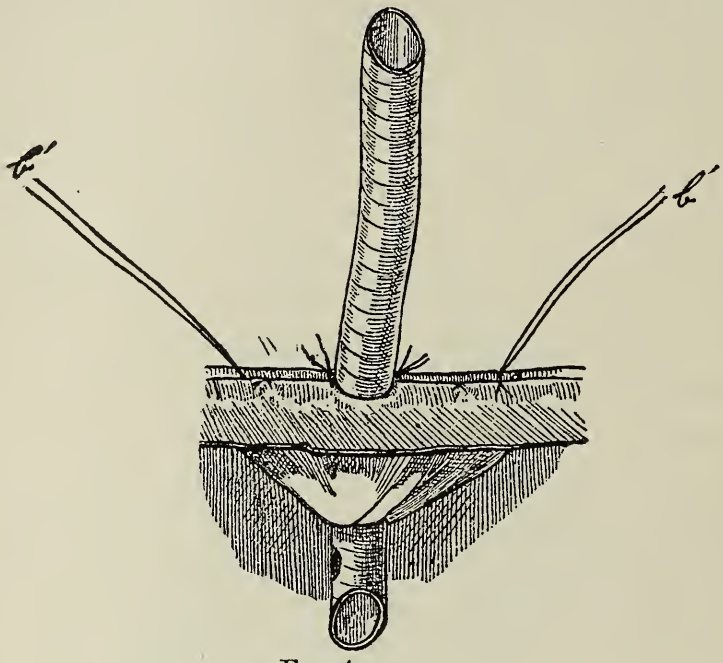


Fig. 4.

the fistula through the gastric wall which makes it water-tight. As frequently observed in Mikulicz's clinic, the oblique canal later assumes a straighter direction, sometimes as early as three weeks after the operation. Yet the patency of the fistula has always remained perfect.

Then follows a brief report of a case operated upon after the method described. It was carried out strictly after the method of Kader, the stomach being held up to the abdominal wall on either end of the field of operation by a silkworm-gut stitch which penetrates the entire abdominal wall, and that field of operation was lined by peritoneum and fascia by means of a running suture. The external wound was entirely closed by stitches, layer by layer, up to the tube. The wound healed by primary union, and the patient was up on the fourth day after the operation.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

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DIVERSION FOR DOCTORS.

It is worthy of note that men employed in all busy avocations deem it necessary to take an annual vacation to free themselves from the harassing cares of business. Strange to say, the medical profession is an exception to this rule, and that too in the face of the fact that the doctor above every other busy man needs recreation, diversion, rest. Why is this true? Certainly not because he thinks it ill-advised, for is he not continually laboring with his patients to convince them of the truthfulness of the statement? Is it that he thinks himself too poor to indulge in such a luxury as travel? Sad commentary, indeed, upon his *clientèle*, who would most willingly contribute to the annual trip of the parson and forget the doctor. Or is it that the medical man fears that, were he to "steal away" for a fortnight or more, his enterprising but younger brother would likewise "steal away" some of his patients? Most likely there is more than the grain of salt of truth in the latter phase of the matter. But, even granting 'tis true, fie upon you, doctor! If your patient has not been convinced of your superior skill, most excellent ability, and trustworthiness as a friend by your long and faithful attendance at the bedside, let him go to his new love, and thanks go with him. But granting that our doctor is too poor to travel, is he to buckle down to hard work day in and day out without a restful breathing spell? Why, of course not, for there are many

sources which, embraced, will bring much comfort and divert the mind. Take to hunting or fishing for a change. You say you don't like either? Neither did your last patient like the dose of physic you gave him; but, look you, what good it did him! Persevere, keep on, and you will like it; and even if you don't, it gets your mind off your business, and besides begets exercise for your legs other than straddling a horse or cramping them in a close buggy. There are many other ways of enjoying oneself, and it's joy we are after. Suppose you take up cards—no gambling—just an honest game of euchre or whist. You don't know the game? That's all right; it will divert you more to have the trouble of learning it. If, however, your conscience will not permit you to go to the card-table, "drop into poetry." Don't say that you can not, for you have never tried it; you might at least *startle* the medical world with your verses—then, too, it would be a diversion, even if the editor used your verse to light his pipe or kindle his fire with. If you can not rhyme, and your words will not match and jingle, why look what a field there is in writing *literary* articles or thoughts upon science. Plenty of examples in our profession—Oliver Wendell Holmes, Weir-Mitchell, King, and lately Lydston. There are examples for you, and good ones too. Try it, my dear doctor, try it. And then there is painting. If you can not paint on canvas, paint the fence or outhouse, any thing for diversion. Interest yourself in some special thing outside your profession. Horses, flowers, music, children, boating, birds, plowing, and sowing of seed—what an array of neglected opportunities. Cultivate one or all of them, for it will be restful. What will it profit you if you gain the whole world and lose—your health. What a splendid time to begin the good work—the Christmas time, the New Year. Here is the warning too: another year just closed! Are you sure that you will be here another one? Then try to prolong life by looking a little, just a little, after your own health as well as after the health of your patrons. "How soon are we forgot" will be said of you, just as you have said it of others. Upon this January night, as the winds howl around your chimney

and you sit with the good wife before the blazing fire, with feet perhaps on mantel-piece and pipe in mouth, resolve, as the smoke curls in and among the golden tresses of your children, that you will this year do more for yourself than you did the last one.

MATHEWS' QUARTERLY JOURNAL OF RECTAL AND GASTRO-INTESTINAL DISEASES.

The QUARTERLY appears this issue, not in new dress but under a new name, which the editors feel will commend itself to all its readers.

The journal has met with a most flattering reception since the issuance of the first prospectus, in which it was made known that a journal devoted to the QUARTERLY'S special field was to be established. For three years it has been published regularly under the name of *Mathews' Medical Quarterly*, this name being chosen at first without due regard for the importance of the name. After being urged by many to change its title so that on its face it would show what its true scope was, the above name was adopted. Under this title the journal will be issued as regularly as in the past. The number of inquiries in regard to it that have been received since the change show it to have been wise.

The editors wish to express their profound sense of gratitude for the kind support of the reading and writing members of the profession which has been theirs from the start, and beg leave to express the hope that the same cordial relations will continue in the future.

REGULAR TEACHING OF ANESTHESIA.

Although occasion was had to mention in this department in a recent issue the importance of a more thorough instruction of the medical student of to-day in the method of the administration of anesthetics, we feel that the importance of the subject demands the recognition of the action taken recently by the Philadelphia Polyclinic in the appointment of a regular instructor

of this subject. It is devoutly to be wished that a larger number of schools will in the near future make a separate lectureship of this, and teach the student before his graduation how to give ether and chloroform, and not make it necessary to go to a post-graduate or polyclinic school to get what is due them as students.

The following is clipped from the *Philadelphia Polyclinic*, and is self-explanatory:

"Dr. W. Oakley Hermance has been appointed instructor in the administration of anesthetics in the Philadelphia Polyclinic and anesthetizer to the Polyclinic Hospital. The faculty and trustees recognize the growing sentiment among the profession, that the administration of anesthetics should be intrusted to skilled hands only, and in providing for proper instruction of the incoming residents of the hospital they at the same time afford an opportunity to the pupils of the college to gain similar knowledge and experience."

With Our Exchanges.

GASTRO-INTESTINAL DISEASE.

AULDE, JOHN, M. D., PHILADELPHIA. *Hydrozone in Gastric and Intestinal Disorders.* (*New York Medical Journal.*)

A period of nearly twelve years has elapsed since I first began the clinical use of hydrogen dioxide, generally referred to at that time as the peroxide of hydrogen. In 1887 I published a paper giving a detailed account of several cases in which it had been employed by inhalation, but even then I was thirty years behind the report of Dr. (now Sir) Benjamin Ward Richardson, of London, who had made a thorough investigation of its antiseptic, detergent, and healing properties. Notwithstanding the fact that this preparation had been known to the medical profession for that length of time it had achieved little or no reputation. This, however, may be explained by the fact that the discovery preceded the dawn of bacteriology. Indeed, I was one of the early contributors to medical literature relating to the clinical value of this product; and since that time I have published a number of articles embracing practically every application, both medical and surgical, to which hydrogen oxide is adapted.

In the present communication it is my object to direct the attention of the profession to its special value in the treatment of gastric and intestinal disorders. In gastritis, for example, there is no antiseptic which can be given with so much benefit as this remedy, because its effect is immediate, and even in considerable doses it is absolutely harmless. The same is true in regard to its employment in typhoid fever, cholera infantum, and Asiatic cholera. In the latter disease its efficacy has been thoroughly demonstrated by a number of well-known physicians, and its applicability in cholera infantum is well known to those physicians who have given careful attention to the most modern methods in the treatment of this class of cases.

The following brief notes will be sufficient to indicate the availability of this remedy in the treatment of the disorders already mentioned, although, in view of the fact that hydrozone

is a more concentrated product, and withal a permanent solution, this latter remedy should have the preference. It contains at least double the volume of nascent oxygen which has heretofore been the standard for the medicinal peroxide of hydrogen.

In gastritis, either acute, subacute, or chronic, we have to deal with an unhealthy condition of the lining membrane of the stomach. The inflammation is attended with an increased output of mucus, which seriously interferes with the normal functions of peptic glands. By the introduction of a small quantity of hydrozone, in the strength of one part to thiry-two parts of boiled or sterilized water, this objectionable mucus is at once destroyed by the action of the oxygen which is released, and the contents of the stomach remaining are promptly discharged into the small intestine. A patient suffering from gastritis should take, at least half an hour before meals, from two to four ounces of diluted hydrozone (one to thirty-two), and lie on the right side so as to facilitate the action of the stomach in discharging its contents.* The antiseptic properties of hydrozone thus used are sufficient to destroy the micro-organisms and leave the stomach in a healthy condition for the absorption of nutritive pabulum. All forms of fermentation are promptly subdued by the active oxidation resulting from the liberation of nascent oxygen. The patient is then in a condition to take suitable food, which should be nutritious and easily digested, liquids being preferred, until the active symptoms have subsided. Later small portions of solid food can be ingested, but all food stuff of a starchy character must be thoroughly masticated, in order to secure the action of the salivary secretion upon the starch granules, breaking them up, and lessening the tendency to fermentation in the stomach. After taking a meal, a patient with gastritis should follow it with medicinal doses of glycozone, which contains, in addition to the nascent oxygen contained in hydrozone, a percentage of glycerin which favors osmosis and assists in re-establishing the functional activity of both the peptic and mucous glands of the organ.

In the treatment of cholera infantum, typhoid fever, and Asiatic cholera the same general plan should be adopted in

*In chronic cases with a large output of gastric mucus, and particularly in gastric ulcer, concentrated solutions are not well borne at first, owing to the formation of oxygen gas, but this difficulty disappears with the continued use of the remedy, and no treatment of gastric ulcer can be regarded as complete without the local employment of hydrozone.

dealing with the stomach, always bearing in mind the necessity for having the patient remain in the recumbent position and on the right side for at least half an hour after the ingestion of the solution. In addition, however, to the preliminary treatment of the stomach, the same solution (one to thirty-two) is used as an injection into the lower bowels, care being exercised to insure its introduction as high up as possible. This can be managed by having the patient lie on the left side, with the hips well elevated, and the employment of a long, flexible rectal tube. In this manner we secure and maintain an antiseptic condition in both the stomach and large intestine, the importance of which will be understood when we consider the large number of micro-organisms which grow under these favorable conditions with such remarkable rapidity.

When deemed advisable, the solution introduced into the lower bowel may be combined with large quantities of either hot or cold water, which enables us to obtain the benefits of irrigation in addition to the antiseptic effects. These irrigations may be employed as frequently as deemed advisable by the medical attendant, but they will usually prove satisfactory if administered at intervals of four hours.

Although brief, it is believed this communication will prove serviceable to a large number of practitioners who have hitherto found serious difficulties in counteracting the mephitic influences of bacteria in this class of disorders, and the clinical virtues of the remedy being now so fully recognized, no one will hesitate to adopt the methods suggested, which may be conveniently carried out in addition to the usual routine treatment.

Maston, G. W., Albany, Oregon: Removal of Tumor of the Mesentery, Resection of Forty-four Inches of Intestines, End-to-End Anastomosis with Murphy Button. (*Medical Brief.*)

The patient was a male, aged forty-nine years. He had noticed an enlargement in his abdomen for three or four years, which had caused considerable pain. The tumor was found to be movable, and it was diagnosed a solid tumor of the mesentery, probably malignant abdominal. Action showed the intestines to be intimately attached to the growth; resection was decided

on after consultation. The tumor was hard, six inches in diameter at the widest point, two inches at the narrowest, and about two inches thick; later examination showing it to be a spindle-cell sarcoma. A large-sized button was used in the anastomosis, the upper end being put on quite a stretch when the button was in place. Operation lasted one hour; pulse of patient eighty-four when put to bed. Liquid food alone given until the twentieth day.

Sharp pain in the abdomen was felt, at times quite severe, and four months after the operation much borborygmus was complained of, the stools being thin and of ashy color. The patient died in great pain just five months after the operation.

An autopsy showed the intestine united about three fourths of its circumference, the ununited portion being at the mesenteric border.

The button had lodged about six inches below the point of approximation, and had caused a perforation. There was no contraction of the gut at the point of union.

The following interesting points in connection with the case are recited in conclusion:

(1) Because of the failure of the button to pass in a reasonable time, having remained in the intestines four months and ten days. (2) The absence of pain for over a month. (3) The attempt of nature to close the opening in the intestines by adhesions. (4) The final perforation of the gut from gangrene caused by the lodgment and pressure of the button. (5) The fact that a large, heavy button placed in the lower part of the small intestines may not pass up through the ascending colon unless the stools are quite solid.

Did the removal of so much of the small intestine have anything to do with the continuous passing of thin, ashy-colored feces?

Book Reviews.

The Diseases of Infancy and Childhood. For the use of Students and Practitioners of Medicine. By L. Emmett Holt, A. M., M. D., Professor of Diseases of Children in the New York Polyclinic, Attending Physician to the Babies' Hospital, and to the Nursery and Child's Hospital, New York, etc. With seven full-page colored plates and two hundred and three illustrations. Sold only by subscription. Prices, cloth, $6.00; sheep, $7.00; half morocco, $7.50. New York: D. Appleton & Co. 1896.

This is one of the most interesting and important books that has come to our notice in a great while. To the hundreds of practitioners who have attended the lectures of Dr. Holt at the New York Polyclinic, and to those who have known for some time that the work was in the course of preparation, its advent will be most welcome. Not only to these, but to every one who is in the least familiar with medical literature, Dr. Holt's exceptional qualifications for writing a book on this subject are well known, and they too will welcome the book.

The author states in his preface that "it is in infancy and early childhood that the peculiar conditions exist which separate pediatrics from general medicine and entitle it to be ranked as a special department," so this book is essentially one on the diseases of infancy and childhood, and its pages are not taken up with a discussion of subjects foreign to children.

The style of the writing is most charming; it is terse, forcible, and lucid, with short sentences very much to the point, not an obscure or indefinite one occurring anywhere. A careful perusal of the entire work shows it to have been produced with great care, and with great freedom from typographical errors, only one being seen, on page 400, a space being omitted between two words. It is to be regretted that the old spelling of "hæmorrhoids" is used, and we fail to see why the English spelling of "colour" is preferred to our own. The sign of abbreviation after *per cent.* is omitted throughout.

Perhaps the feature which commends the work most is the unusually full description of pathological lesions of the various diseases taken up. Dr. Holt, besides being a clinical teacher of experience and ability, has had exceptionally good opportunities

for pathological study, and that he has made the best of these opportunities is evidenced by his work before us. A valuable addition to the full notes of the lesions is the excellent photographs and drawings of pathological conditions that are introduced.

The general arrangement of the book is to be commended, Part 1 being devoted to the hygiene and care of infants and children; growth and development of the body and the peculiarities of disease in children. Part 2 is given up to the diseases of the newly born and of older children, in which is included one of the most important portions of the work, *nutrition*, "its derangements and diseases resulting therefrom." In this class has been included rickets and scurvy, very rightly, we believe.

In the description of a disease the following order is followed almost in every instance: Etiology, lesions, symptoms, course, diagnosis, prognosis, and treatment. The simplicity, compactness, and easy method of reference commends it at once.

Taking up the book in detail, the chapter on the general care of the new-born is a most excellent composition, and here, as is frequently seen in the book, a tabulated statement of a large number of cases is used to illustrate a point. Books of this character have as a rule considered that the true place for the new-born infant was in works upon obstetrics, and while this is in a measure true, the child belongs as much at this time to the pediatrist as ever. A full description of the diseases of the new-born follows, including the palsies due to causes acting during labor. Too much emphasis can not be placed upon the importance of the knowledge of the weight of the infant, and it is a pleasure to read the six pages that are devoted to the development of the infant and child.

In the chapter on the general methods of diagnosis and symptomatology the method of exclusion is advised as the best means of arriving at a diagnosis. Considerable space is given the cry of the infant as an aid in diagnosis, a point not generally observed by the general practitioner. On page 48 no mention is made of *lactophenin* as a medicinal antipyretic, which in this part of the country at least has been found not to possess the disagreeable effects sometimes shown by phenacetine or the rest of this group, while possessing all the beneficial ones of the others.

Stomach washing, gavage, and irrigation of the colon are described well on pages 60 to 65. On page 79, in writing of acute diseases, the term "puerperal fever" is used as a synonym for sepsis in the new-born; this has for so long been used by the general practitioner to refer to a pathological condition in the mother alone that we think its use here ill advised. No mention is made in the paragraph on ophthalmia neonatorum of the means to prevent the infection of the unaffected eye, should only one be involved, a very important point indeed.

The chapter on nutrition is a masterpiece, and it is here and in the chapter on diseases of the intestinal tract that we would expect to see the writer at his best, and the perusal of these chapters bears us out in this belief. The former is exceptionally lucid, and the description of natural and artificial foods leaves nothing to be desired. In the tables of milk analyses it may prove a little confusing to the average student to find that the component parts of the milk in the analyses of the milk are not given in regular order.

The clinical examination of breast milk is shown to be as easy as urinary analysis and of as much importance at times. The description of the home modification of milk is very comprehensive, and the formulæ given for any possible combination to meet various indications are easy of reference. It is refreshing to read his opinion as to the superiority of scientific artificial feeding to wet-nursing and the reasons therefor, and his endorsement of the milk laboratory, which he does in the following manner: "If artificial feeding can be begun at birth and carried on according to the most approved methods, it is highly successful in the great majority of cases in which maternal nursing is impossible. In my experience fully ninety per cent. of the infants seen in private practice can with care be so reared. After two years' experience I have found the laboratory of great value in difficult cases of infant feeding, and it soon becomes almost as much of a necessity to the physician among young children as does the apothecary shop to the general practitioner. The only drawback is the expense."

The part of this chapter devoted to the preparation of the various infant foods is valuable. As stated above, scurvy and rickets are well placed in this chapter.

Diseases of the throat are considered in a concise article of about twenty pages. The influence of diet upon acute inflammation of the pharynx and tonsils is not emphasized as it should be. There can be no doubt that many cases of acute pharyngitis and tonsillitis are induced by eating candies, pastries, etc. The article on retro-pharyngeal abscess is clear and sufficiently full. Of the idiopathic cases the author places the mortality at about five per cent. This seems more favorable than the opinion generally held, and is in marked contrast to the report of Gautier, whom he reports as having collected 95 cases with 41 deaths. Attention is called to the danger of mistaking retro-pharyngeal abscess for stenosis of the larynx. The author recommends incision through the mouth, usually evacuating the pus with the finger nail. For cases secondary to Potts' disease he recommends an external incision just in front of the sterno-mastoid muscle.

Adenoid growths receive the attention which their great frequency and serious results deserve. The author is of the opinion that in younger children catarrhal symptoms predominate, in older, obstructive. To this rule there are, I think, many exceptions, as one frequently sees children under two years old in whom the chief symptom was marked dyspnea at night. Chloroform is generally advised for operation, which is performed with the child lying down and the mouth held open by a gag; by introducing first cutting forceps and following this with Gottstein's curette; the head is to be kept low, and the child turned upon its face when there is much bleeding. This technique is to be commended, except that Gradle's forceps is to be preferred to Lowenberg's.

Tonsillitis is classified into follicular, phlegmonous, and pseudo-diphtheritic. The more common synonyms for the latter are diphtheroid or croupous tonsillitis. The statement that patches of the pseudo-membrane are occasionally to be seen upon the fauces and pharynx is, I think, open to criticism. Any decided membranous formation which begins on the tonsils and extends over beyond them to the adjacent fauces is certainly in a great majority of cases diphtheria.

The classification of enlarged tonsils is practical and commendable. The author divides them into, first, those nearly or

quite in contact. In these operation should always be performed. Second, tonsils projecting not more than one fourth of an inch beyond pillars—operation only exceptionally demanded. Third, intermediate cases in which operation is to be determined by the symptoms present, such as dyspnea, cough, difficult deglutition, malnutrition, etc. The author lays proper stress upon the importance of enlarged faucial and pharyngeal tonsils as increasing the liability to and danger of scarlet fever and diphtheria. The guillotine is advised as the best instrument for operation, and it is recommended that the tonsil be cut as nearly as possible even with the faucial pillars. As a whole, the space devoted to diseases of the throat and tonsils is very satisfactory, and the articles on these subjects will be safe guides for the practitioner.

As stated above, one would expect to find his best work in the chapter on diseases of the digestive system, especially that part devoted to the intestinal tract, after his excellent monograph in Keating's Encyclopedia. The illustrations in this chapter are new and of uniform excellence, and the description of pathology and symptomatology very good indeed.

The statement that dentition may be the cause of symptoms will not be well received by those who hold the opposite view so emphatically, but the view of the writer in the following emphatic words can not be mistaken: "Although I strongly believe that the importance of dentition as an etiological factor in disease has been in the past greatly exaggerated, and although I have formerly held the opinion that simple dentition did not and could not produce symptoms, within the past few years I have been compelled by clinical observations to change my opinion upon this subject; and I am now willing to admit that dentition may produce many reflex symptoms, some even of quite an alarming character."

The chapter upon appendicitis is a little disappointing. We doubt that a foreign body is found in a majority of cases, it being present in at most twenty per cent. of operative cases. Too much can not be said against the advice to administer morphine in this trouble to control pain, though it is stated here that it should be given with caution. Though there is a difference of opinion as to whom this trouble belongs, the weight of opinion is that it is a surgical disease, and greater emphasis should have been placed upon this point.

The chapter upon diseases of the rectum is short but explicit, and perhaps full enough for a work of this character. Dilatation of the sphincter is not mentioned as a means of cure in fissure of the anus, except as a *dernier ressort* in severe cases, the most important and sometimes only sure means of cure, and one that can be done very easily by merely the insertion of the finger or thumb into the rectum. The application of ointments and lotions and caustics is in most cases futile, and if a cure does result it is only after prolonged treatment.

In the chapter on diseases of the lungs, which are excellently well described, the author's experience as a pathologist is best shown. To him was first due the protest against the use of the term "capillary bronchitis" denoting a pathological condition distinct from others, and it is a disappointment to see the use of the term at the head of a paragraph in this chapter on page 474. In one place he states that the name should not be used, and here he countenances the use of it. In the mention of the aids to physical diagnosis it is to be regretted that the book was in press before the attention of the profession was called to the phonendoscope, which is such a great improvement over the stethoscope. Percussion is of little aid to diagnosis, as stated on page 501. On pages 460 and 464 the term "*bronchial* fremitus" is used, when we feel sure "ronchial fremitus" is meant, at least it would be more acceptable. Throughout this chapter the use of temperature charts to bring the clinical picture of the disease more prominently before the reader is to be commended, and it is to be hoped that it will encourage more practitioners to use the temperature chart oftener than is the custom. To those who have not thought of the subject, or have not had the opportunity to examine a large number of cases to see how often lobar pneumonia occurs in children under two years of age, the series of cases mentioned in the text will be a surprise. The paragraph on antipyretics in pneumonia is excellent. The point that delayed pneumonia is not a central pneumonia, as has generally been stated and believed, but is an *inaccessible* pneumonia, is a very valuable suggestion, and will explain a large number of cases that are a puzzle to the diagnostician when the case presents all the rational symptoms of pneumonia, and yet no signs can be found.

Thirty-eight pages are given up to a consideration of diseases of the circulatory system. One hundred and forty-three pages are given up to a description of the diseases of the nervous system, one of the most interesting chapters in the book. The author's opinion advises against the operation in microcephalus. Infantile paralysis is recorded as "acute poliomyelitis" and not acute anterior poliomyelitis, as is generally the case.

A large number of cases and the record of a large number of autopsies show typhoid fever to be very rare in infants under two years of age. The chapter on tuberculosis is very thorough indeed.

The article on diphtheria is excellent. From the standpoint of pathology, diagnosis, and treatment it is the best presentation of the subject to date that we have seen. The author considers infection through healthy mucous membrane very unlikely if not impossible, and urges in consequence the importance of attention to adenoid growths, enlarged tonsils, and catarrhal inflammation of the nose and throat. He agrees with Sidney Martin, Oertel, and others that the essential lesion of diphtheria is not the formation of membrane, but acute degeneration changes in the cells of the body caused by the toxines.

In one hundred and nine cases of diphtheria the membrane was confined to the tonsils only in twenty-seven cases. This accords with general experience, but differs from the belief of Lenox Browne that in true diphtheria the membrane will nearly always have extended beyond the tonsils after the first twenty-four hours. In regard to the kidney lesions he attributes their causation to infection with the streptococci.

The author is of the opinion that clinicians must inevitably come to the belief in a catarrhal diphtheria without membrane, a view now held chiefly by pathologists.

It is gratifying to find the author an earnest advocate of the clinical as well as of the microscopic diagnosis of the disease. We fully agree with him that in at least four fifths of the cases an accurate diagnosis can be made, clinically, after twenty-four hours, and that the remaining one fifth, which will be either cleared up by a longer time or remain uncertain, are of more importance for the sake of others than the patients themselves.

As to treatment the author is an earnest advocate of the efficiency of antitoxin. He believes that it should be used for immunizing purposes in every child that has been exposed to the disease in a family or in an institution. As regards the dose of antitoxin for curative purposes he recommends for children over two years old, in all severe cases, including laryngeal stenosis, from 1,500 to 2,000 units, this dose to be repeated in from eighteen to twenty-four hours if no improvement is to be seen, and again in twenty-four hours if the course of the disease is unfavorable. "The third dose is rarely necessary. Exceptional cases of great severity, especially when seen late, should receive 3,000 units." He attributes the occurence of eruption on the skin, swelling of the joints, etc., which were formerly seen occasionally, to the large quantity of the serum used. He declares that the unfavorable effects of the antitoxin upon the heart, blood, and kidneys are not proven.

It seems to the reviewer that the urine should be examined before administering the antitoxin when that be practicable.

In addition to antitoxin the author recommends whisky and strychnia internally, but no other drugs. To the reviewer it seems that mercury in the form of the bichloride, or the mild chloride, is often of value. Not a great deal of importance is laid upon the local treatment, and its discontinuance is wisely advised if much resistance is met with.

The admirable work done by the American Pediatric Society Committee, of which Dr. Holt is a member, in collecting a large series of cases in which the antitoxin had been used is well known, and this chapter is one of the fullest and best in the book, thoroughly practical and up to date. H. E. T., S. G. D.

Over the Hookah: The Tales of a Talkative Doctor. By G. Frank Lydston, M. D., Fellow of the Chicago Academy of Medicine, the Southern Surgical and Gynecological Associations, and the American Academy of Social and Political Sciences; Professor of Criminal Anthropology in the Kent College of Law; Member of the American Medical Association and the Association of Military Surgeons of the United States; Honorary Fellow of the Texas Medical Association, etc. Chicago: Fred Klein Company, publishers. 1896.

In medicine, as in every other avocation, the busy man should have some diversions in order to prevent the rapid loss of gray matter. Some take to poetry, others to politics; some to hunt-

ing, and others to fishing. Be that as it may, it is best for the busy doctor to have some way in which to rest his brain. Dr. Lydston has taken to literature, and the profession is greatly indebted to him for it. He has given us a book in *Over the Hookah* that will tend not only to rest and amuse, but which will instruct. The doctor has not gone out of his own profession to select his subjects, at least some of his subjects. The chapters dealing with *The Passing* of Major Merriwether are the most pretentious in the book. And indeed an hour spent in company with good Doctor Weymouth is well spent.

The author has the happy faculty of tersely writing many forcible truths that bristle continually through what would seem to be a very rough outer garment. Although some of the characters depicted are illiterate and not given to much "book larnin'," they are instruments in the hands of the author to deal forcibly and truthfully with many knotty questions. Satire has an abundant place in "Over the Hookah." The author seizes the opportunity to pay back some of the blows given the medical profession. Hear him:

"Lord Byron's brain was as clubbed as his foot. Hogarth would have caricatured the Vestal Virgins, and Smollett was an unsuccessful physician himself. Both literature and medicine have cause for thanksgiving in the failure of Smollett to gain a livelihood by the practice of medicine. It was certainly unbecoming in Smollett to allude to his one-time *confreres* as 'a class of animals resembling so many ravens hovering over a carcass, and plying for employment like scullers at Hungerford Stairs.'" And so in turn is Dryden, Ben Johnson, Dean Swift, Tobias, Shakespeare, and others "done to a turn."

The author occasionally drops into poetry, and quite good poetry it is, too. Pathos, real pathos, is found often here and there in the book, so pathetic that the reader is reminded of Dickens, so true to life are the pictures. "Hell-town," in lower New York, is partly described as follows:

"And what sights we see! Dirty, unkempt and brutal, slatternly women, with here and there a pitiful attempt at finery and gewgaws that herald all too plainly the calling of the wearer, though a sign is unnecessary where open solicitation is fashionable. Sitting on the curbstones or playing about in the gutters

are filthy children, looking more like gnomes of the hills than infants, if indeed filth and squalor can be so picturesque. The sight of these woe-begone little creatures, toddling, swearing, and fighting about among the feet of their disreputable elders, these children of all ages, both sexes, and varying degrees of misery, is a lesson that moralistic cranks and alleged reformers might do well to study." As a remedy for all this the author speaks thus: "Clean the locality, clean the people, educate the children, and prevent criminals from intermarrying and breeding moral imbeciles and physical wrecks. More soap and water and fewer tracts."

The book is written in a clear, forcible, and entertaining style, the subject-matter not only pleases but instructs, the moral is always a pure one, a hearty laugh is often provoked, and the reader never disappointed.

The publishers deserve much praise for the beautiful and substantial manner in which the book appears. It is profusely illustrated by drawings true to nature and well executed. Every doctor should provide himself with a copy of *Over the Hookah.*

Diseases of the Stomach. A Text-book for Practitioners and Students. By Max Einhorn, M. D., Instructor in Clinical Medicine at the New York Post-Graduate School of Medicine and Hospital, etc., New York City. New York: William Wood & Company. 1896.

It is a pleasure to see a book of the excellence of this one by Dr. Einhorn written by a resident of this country, as most of the works on this subject of any note have been by foreigners. The profession of this country have been familiar with the writings of Dr. Einhorn for some time, and have recognized in him, by his frequent suggestions of so much clinical worth, an authority in diseases of the stomach. The book by him is very carefully written, and is valuable, not only on account of the original work which it represents but on account of the many references that he has made to the literature of the subject, the book containing a most complete bibliography, placed at the foot of each page where it will be easy of reference.

The book is evidently written from the standpoint of the practitioner, for it is thoroughly practical in every detail, the style of the writing being such as will make the book attractive to the student as well.

The chapter on the anatomy of the stomach is ample, though it occupies but eight pages; the physiology follows, disposed of in six pages. The methods of examination are excellently given, the chapter being begun by the method of interrogating the patient, a point not well known by most clinicians; at least not much is gotten from the patient as to the symptoms, etc., in the majority of cases. That part of the chapter on the examination of the function of the stomach is exceptionally good; the tests given are the most practical ones and easiest of execution.

In this connection may be mentioned the ingenious method of obtaining some of the stomach contents by means of the stomach bucket devised by Dr. Einhorn. Other methods of obtaining some of the contents are not satisfactory, and this method of the author's has been found to be very serviceable. To him also is the profession indebted for the *gastrodiaphane* for the transillumination of the stomach, in order to ascertain the exact position and size of the stomach, to recognize tumors or thickening of the walls by their lack of translucency. The *gastrograph* is also one of the instruments devised by the author to be used to register the mechanical function of the stomach.

The chapter on diet is an excellent one, and in a small space gives all that is needed in the conduct of an ordinary case. The chapters on the various pathological conditions are in keeping with the rest of the book, giving a complete clinical picture of each one. The one on chronic gastric catarrh is perhaps the best of these. The book is a credit to Dr. Einhorn and to the profession, and will be appreciated by teachers, students, and practitioners.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A. M., M. D., Demonstrator of Physical Diagnosis in Rush Medical College, Chicago, etc. Second edition, revised and enlarged. Philadelphia: W. B. Saunders. 1896. Price, $1.25, net.

This is a most excellent little work, and will prove a great help to students of this branch of practice. All teachers of this subject realize, no doubt, the difficulty of impressing the average student in the first place with the importance of mastering thoroughly physical diagnosis, and in the second place of having a thorough ground-work of anatomy and physiology upon which

to build the superstructure of a thorough acquaintance with the signs of health and disease obtained from the chest. Dr. Corwin has very rightly emphasized, by the position given it, the topography and landmarks of the chest before any mention of the methods of diagnosis is made. For a synopsis of the subject it is the most complete that we have seen, and will be of great service to teacher as well as student. It seems too bad that the issue could not have been delayed long enough to have contained in it a description of the phonendoscope, which will take the place of the stethoscope entirely in time. The same advantages can be had with it in that it can be made multiplex for clinical demonstration.

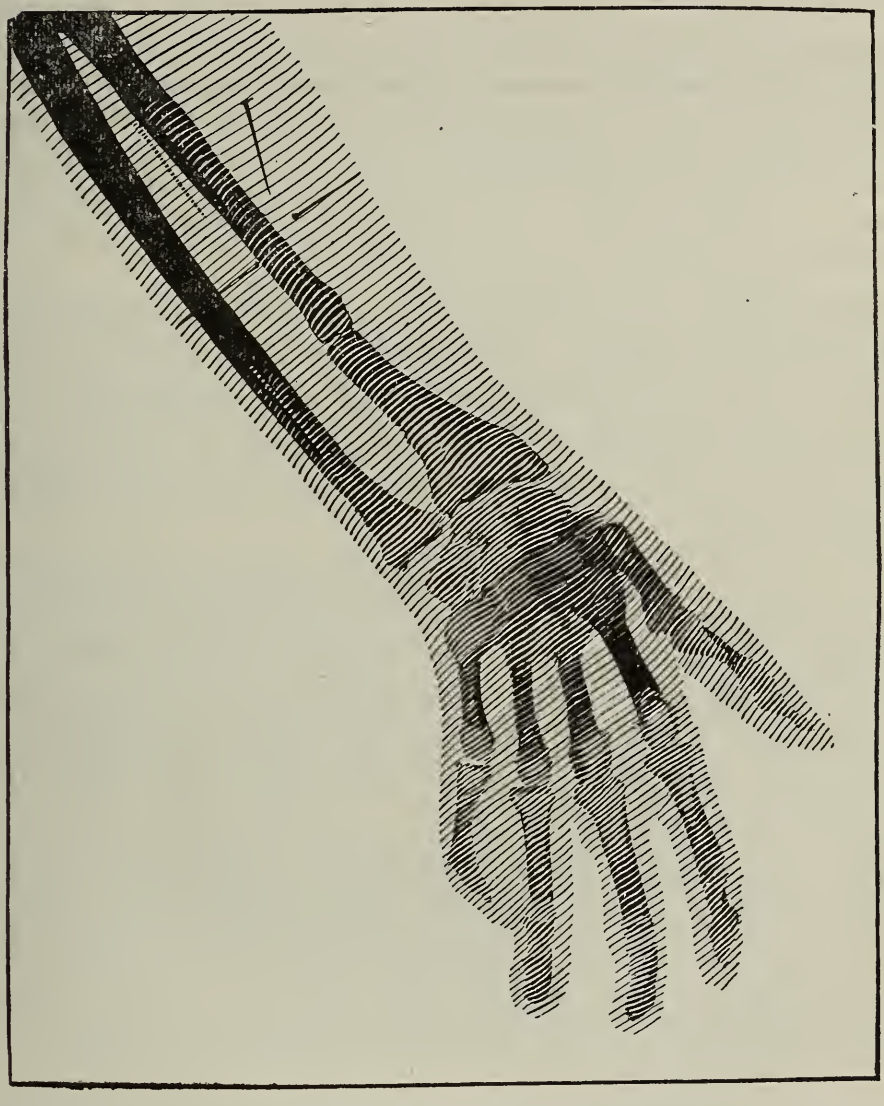
A Treatise on Surgery. By American Authors. Edited by ROSWELL PARK, A. M., M. D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, New York; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; Ex-President Medical Society of the State of New York; Surgeon to the Buffalo General Hospital, etc. Volume II, Special and Regional Surgery. With four hundred and fifty-one engravings and seventeen full-page plates in color and monochrome. Philadelphia and New York: Lea Brothers & Co.

The second volume of this great work on surgery is in keeping with the first volume, indeed in some particulars exceeds it. The following named distinguished surgeons are the contributors to Volume II: William T. Belfield, M. D., Arthur Dean Bevan, M. D., Clarence J. Blake, M. D., Edward H. Bradford, M. D., Charles Stedman Bull, M. D., D. Bryson Delavan, M. D., Frederick S. Dennis, M. D., James H. Etheridge, M. D., Duncan Eve, M. D., Arpad G. Gerster, M. D., Charles B. Kelsey, M. D., Robert Lovell, M. D., Rudolf Malas, M. D., Roswell Park, M. D., Charles B. Parker, M. D., Maurice H. Richardson, M. D., Edmond Souchon, M. D.

This array of talent alone would insure a ready sale of the work. It has evidently been the desire of Dr. Park to have the contributors to his book hail from the different sections of the country rather than limited to one section. This is very commendable, and an investigation will show that the Southern contributor has done much, very much, to make the work the success that it is. In the two volumes will be found every thing that is worthy of note in a surgical way and fully up to date.

The X Ray, or Photography of the Invisible. By WILLIAM J. MORTON, M. D., in collaboration with EDWIN W. HAMMER, Electrical Engineer. American Technical Book Company, New York, N. Y.

The cut herewith produced is from the book before us, one of the most complete expositions of this subject that we have seen.



Part first treats of the rudiments of electricity, explaining fully the terms used in that science; part second deals with the apparatus necessary to get the best results with the X rays; part three describes the operation, and part four is devoted to the surgical value of the X ray.

The book closes with an appendix containing Prof. Roentgen's original announcement and a short paper by Thomas Edison and

by Dr. Oliver Lodge. The collection of photographs taken from the original negatives is an excellent one, and while they do not appear with the same clearness that the negatives do, one is surprised at the uniform excellence of all of them. The book is now in its fifth thousand.

An American Text-book of Physiology. Edited by WILLIAM H. HOWELL, Ph. D., M. D., with the assistance of the following contributors: Henry P. Bowditch, M. D., John G. Curtis, M. D., Henry H. Donaldson, Ph. D., Frederick S. Lee, Ph. D., Warren P. Lombard, M. D., Graham Lusk, Ph. D., W. T. Porter, M. D., Edward T. Reichart, M. D., and Henry Sewall, Ph. D., M. D. Fully illustrated. Philadelphia: W. B. Saunders. 1896. Price, $6.00, cloth. For sale by subscription only.

This book is in the nature of an innovation in a text-book on physiology, as is stated in the preface, as it has been the custom to have a book of this character written by a single author. The method adopted in this book commends itself at once as a most excellent plan, and no better collection of authors could possibly have been made.

It is rather to be regretted that so much of histology has been omitted in the work, for only by synthesis can this subject be taught, and histology is the ground-work for it all. Histology and physiology are not always taught at the same time in schools, and a chapter could well have been devoted to its study in the book before us that the student could begin the study with a summary review of that.

No other criticism can be offered as to omissions save perhaps that the chapter on reproduction, which includes embryology, is very meager indeed, and is disappointing on that account. The book will occupy the same high plane that the other text-books issued by this house do, and will be very generally used.

A Text-book of Materia Medica, Therapeutics, and Pharmacology. By GEORGE FRANK BUTLER, Ph. G., M. D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Chicago, etc. Philadelphia: W. B. Saunders. 1896. Price, $4.00, net.

This book, produced in the usual attractive style of the publishers, is certainly "original" in many respects. The author has not followed the usual course of writers on this subject in the arrangement of his text, it "embodying the synthetic classifi-

cation of drugs based on therapeutic affinities." We can hardly agree that the classification in this work is the best, or that which will be of the most use to the student in the mastering of this difficult study. We believe that the student is only too prone to recognize only an important symptom and not the disease in the collection of symptoms, and is liable to fall too readily into the error of treating that symptom which is most prominent in his eyes, hence we do not think that a classification of "Disease-Medicine" is a wise one. It calls attention to the homeopathic doctrine of having this or that remedy indicated in certain symptoms, regardless of the disease.

Under the head of "Specifics" is mentioned mercury and the iodides, arsenic, colchicum, guiacum, sarsaparilla, stillingia, sanguinaria, mezerum, and xanthoxylum. Quinine is exclued from this group because "the drug is analogous to a normal constituent of healthy bile in its action of plasmodium malariæ." Unless the plasmodium be in the intestine alone we fail to see how any constituent of the bile can have an effect upon it, for when an absorption of any parts of the bile is absorbed into the blood that state becomes pathological.

The chapter upon anesthetics is very incomplete indeed, though it contains some very good points. The chapter upon serum therapy is a very complete review of that subject. The chapter on prescriptions is very good, and will prove of great assistance to the student. Unfortunately too little is said as a rule in medical schools upon this important branch.

Take it as a whole, we do not think that the book will prove very popular with teachers of materia medica.

Physicians' Visiting List for 1897. Philadelphia: P. Blakiston, Son & Company.

This has always been a very popular visiting list. A few minor changes have been made in it from last year, more pages have been added to the cash account and the general memoranda, and the back has been strengthened very materially. For a weekly list this one is very concise and complete indeed.

Books and Pamphlets Received.

The Christmas Ladies' Home Journal far surpasses in general excellence and attractiveness any previous issue of that magazine. Its delicate-toned cover most artistically symbolizes Christmas, and the sentiment and spirit of the holiday season are reflected in its pages. An appropriate opening is a characterization of "Scrooge," from Dickens' "Christmas Carol," the first of Charles Dana Gibson's series of sketches of the great novelist's best known characters. Not less interesting, and revealing the humor and pathos of the Christmas of the children of the very poor, is a page of M. F. Woolf's waifs. In sharp and bright contrast is an article by Lady Jeune, telling "What Christmas Means to Queen Victoria," and a feature of romantic interest is a delightfully illustrated article on the Creoles of New Orleans, by Ruth McEnery Stuart. Quite as interesting is "The Garden Party of an Empress," an American woman's description of a great social function given annually by the Empress of Japan. To the Christmas Journal Rosa Bonheur contributes "The Story of My Life," and special drawings and photographs, telling of her work as an artist, her successes, and of her daily life. Mrs. Henry Ward Beecher, in the second of the "Great Personal Events" papers, recalls "When Mr. Beecher Sold Slaves in Plymouth Pulpit," the excitement incident to those remarkable slave auctions and their wide-reaching effect being graphically detailed.

Beginning with the new year, Popular Science News (New York) is to be much improved—many new writers and prominent contributors having been engaged. It is the only scientific journal that is really popular and free from technicalities. Its departments of Nature, Science, Archæology, Invention, Electricity, Health, Hygiene, and Medicine are ably conducted by specialists, either one being alone worth the subscription price. This journal is a great educator for young and old, and should be in every family. Write for a free sample copy.

The Twelfth Annual issue of the Columbia Pad Calendar has made its appearance in more pleasing form than ever before, having scattered through its daily leaves many charming illustrations, with an appropriate thought or verse for each day in the year. Among the topics are bicycling, outdoor life, and good roads. The cycling fraternity, to say nothing of the general public, has acquired a decidedly friendly feeling for the Columbia Calendar, and its annual advent is always looked forward to with interest and pleasure.

Therapeutic Value of the Mixed Toxines of the Streptococcus of Erysipelas and Bacillus Prodigiosus in the Treatment of Inoperable Malignant Tumors; with a Report of One Hundred and Sixty Cases. By William B. Coley, New York City. Reprint from the American Journal of Medical Sciences.

The Microscopical Proof of a Curative Process in Tuberculosis; or the Reaction to Tuberculin Evidenced by the Blood Changes hitherto Unrecognized. By Charles Denison, Denver, Colorado. Reprint from the Proceedings of the Colorado State Medical Society.

Transfusion, Infusion, and Autofusion; Their Comparative Merits and Indications. By Aug. Schachner, M. D., Louisville, Ky. Reprint from the Journal of the American Medical Association.

Anti-Tubercle Serum; The Treatment of Consumption by Sero-Therapy; Report and Presentation of Cases Treated, etc. By Paul Paquin, St. Louis, Mo. Reprint from the Medical Fortnightly.

Drainage versus Radical Operation in the Treatment of Large Pelvic Abscesses. By Chas. P. Noble, Philadelphia, Pa. Reprint from the Journal of the American Medical Association.

Amputation of the Metacarpal Bone in Continuity, for Injuries of the Middle and Ring Fingers. By Claude A. Dundore, Philadelphia, Pa. Reprint from the Codex Medicus.

A Series of Articles on Speech-Defects as Localizing Symptoms, from a Study of Six Cases of Aphasia. By J. T. Eskridge, Denver, Colorado. Reprint from the Medical News.

Treatment of Intra-Ligamentous and Retro-Peritoneal Uterine Myomata. By Wm. H. Wathen, Louisville, Ky. Reprint from the American Gynecological and Obstetrical Journal.

A Review of the Author's Method of Anchoring the Kidney. By R. Harvey Reed, Columbus, O. Reprinted from the Transactions of the Ohio State Medical Society.

Excision of the Ossicles and Membrane in Chronic Suppuration of the Middle Ear. By J. A. Stucky, Lexington, Ky. Reprint from the Richmond Journal of Practice.

Oxygen as a Distinct Remedy for Disease, and a Life-Saving Agent in Extreme Cases. By A. W. Catlin, Brooklyn, N. Y. Reprint from the Brooklyn Medical Journal.

A New Operation for Certain Cases of Procidentia Uteri. By Chas. P. Noble, Philadelphia, Pa. Reprint from the American Gynecological and Obstetrical Journal.

Syphilis as an Etiological Factor in the Production of Locomotor Ataxia. By C. Travis Drennen, Hot Springs, Ark. Reprint from the Alienist and Neurologist.

Suspensio-Uteri with Reference to its Influence on Pregnancy and Labor. By Chas. P. Noble, Philadelphia, Pa. Reprint from the American Journal of Obstetrics.

Fissure of the Anus; Special Reference to the Cause and Treatment. By Claude A. Dundore, Philadelphia, Pa. Reprint from the Illinois Medical Journal.

Needed Legislation and a Practical Enforcement of Existing Laws. By Jas. A. Burroughs, Asheville, N. C. Reprint from the Transactions of the Tennessee Medical Society.

Further Report of the Serum-Therapy of Tuberculosis. By Paul Paquin, St. Louis, Mo. Reprint from the Journal of the American Medical Association.

Diagnosis in Disease of Infants and Children. By C. G. Slagle, Minneapolis, Minn. Reprint from the Journal of the American Medical Association.

Abdominal Contusions with Visceral Lesions. By Hugh M. Taylor, Richmond, Va. Reprint from the Transactions of the Medical Society of Virginia.

External Hemorrhoids; with Special Reference to Treatment. By Lewis H. Adler, Jr., Philadelphia, Pa. Reprint from the Therapeutic Gazette.

On the Course and Destination of Gower's Tract. By Hugh T. Patrick, Chicago, Ill. Reprint from the Journal of Nervous and Mental Diseases.

Observations on Some Criticisms of the Serum-Therapy, etc. By Paul Paquin, St. Louis, Mo. Reprint from the New York Medical Journal.

Experiences with Paquin's Anti-Tuberculin Serum. By Hanau W. Laub, St. Louis, Mo. Reprint from the New York Medical Journal.

The Treatment of Cancer of the Rectum. By Lewis H. Adler, Philadelphia, Pa. Reprint from the University Medical Magazine.

Artificial Vesico-Vaginal Fistula, etc. By William D. Haggard, jr., Nashville, Tenn. Reprint from the Southern Practitioner.

Post-Operative Intestinal Obstruction. By Hugh M. Taylor, Richmond, Va. Reprint from the Richmond Journal of Practice.

The Rational Use of Cocaine in Surgery. By Claude A. Dundore, Philadelphia, Pa. Reprint from the Codex Medicus.

Pediatric Therapeutics as Proven by Experience. By John A. Larrabee, Louisville, Ky. Reprinted from Pediatrics.

Limits of Nephrorrhaphy. By Hugh M. Taylor, Richmond, Va. Reprint from the Virginia Medical Semi-Monthly.

Sero-Therapy in Bone and Joint Tuberculosis. By Geo. W. Cale, St. Louis, Mo. Reprint from the Medical Review.

Diagnosis of Hystero-Epilepsy. By Hugh T. Patrick, Chicago, Ill. Reprint from the North American Practitioner.

Acute Rheumatic Iritis; with Cases. By A. Britton Deynard, New York City. Reprint from the Post-Graduate.

The Diagnosis of Hysteria. By Hugh T. Patrick, Chicago, Ill. Reprint from the New York Medical Journal.

Chorea. By Henry Hatch, Quincy, Ill. Reprint from the Journal of the American Medical Association.

The Relation of the Physician to Social, Educational, and Moral Questions. By E. Stuver, Rawlins, Wyoming.

Notes on Inguino-Scrotal Cysts. By Thomas H. Manley, New York City. Reprint from the Medical News.

Three Cases of Laminectomy. By Claude A. Dundore, Philadelphia, Pa. Reprint from the Medical News.

Dysentery. By Jas. A. Burroughs, Asheville, N. C. Reprint from the North Carolina Medical Journal.

An Improved Surgical Bed. By Aug. Schachner, Louisville, Ky. Reprint from the Annals of Surgery.

The Non-Heredity of Inebriety. By Leslie E. Keeley, M. D. Scott, Foresman & Co., Chicago.

Neuralgia. By Curran Pope, Louisville, Ky. Reprint from the American Medico-Surgical Bulletin.

Typhoid Fever. By H. H. Roberts, Paris, Ky. Reprint from the American Practitioner and News.

Eye-Strain. By A. G. Blincoe. Reprint from the American Practitioner and News.

Notes and Queries.

THE following resolutions have been adopted by the physicians of Santa Clara Valley, California, and are self-explanatory. The resolutions are signed by every physician of the Valley, numbering 124:

WHEREAS, Rendering professional services at a stipulated fee per capita per annum is derogatory to the dignity of the medical profession, we, the undersigned physicians and surgeons of Santa Clara County, California, enter into the following agreement:

First. We mutually, jointly, and individually pledge our word of honor not to enter into any contract or agreement, or renew any existing contract or agreement, either written, verbal, or implied, to render medical or surgical services to any lodge, society, association or organization.

Second. We will not render medical or surgical services to the members of the above mentioned bodies for less compensation than we charge the general public for similar services.

Third. This agreement shall not be construed to affect existing contracts between physicians and surgeons and the above mentioned bodies.

Fourth. These pledges shall take effect and be in force for a term of three (3) years from and after May 22, 1896.

This agreement shall not apply to hospitals and purely public charitable institutions.

TO THE MEMBERS OF THE MEDICAL PROFESSION.—I would be pleased to have an expression of opinion from you, either personally or through some medical journal, as to the relations of the lay-publishing firms of medical journals and the profession. The request is suggested by the fact that Messrs. Wm. Wood & Co., of New York, refuse to permit the editors of "The American Year-book of Medicine and Surgery" to use in our abstracts of medical progress, articles and illustrations first printed in the *Medical Record* and the *American Journal of Obstetrics*. This decision seems to me to be wrong for the following reasons:

First. It prevents the dissemination of medical knowledge. The year-book condenses, systematizes, and criticises the year's medical work in a shorter space and more permanent manner than the journals, and has thousands of readers no single journal can claim, or hope to reach. Every physician writes and publishes articles in order that every member of the profession may, if possible, learn of his work, and that science and progress may

thus be furthered, and humanity benefited. To interfere with such dissemination of our literature in reputable publications is, I think, discourteous and unjust to the profession, and an injury to medical science.

Second. This injustice and injury to medicine become all the more striking when physicians do not receive a cent of pay for contributions, from the publication of which the lay-publisher is supposed to make considerable financial profit.

Third. No other publishers in the world, not even those who pay authors for their contributions, have in the least objected to our reproduction of quotations, abstracts, and illustrations from their journals.

Do you wish to limit the dissemination of your contributions to medical science by such an exclusion of them on the part of publishers from reputable publications? Is this literature the property of yourself and of the profession or not? Does your gift of it to a journal make it forever the private property of the publishers of that journal? Is it not rather a loan for temporary use only? Will you not hereafter demand that there be printed with your article a statement that the right of abstracting the text or reproducing illustrations is guaranteed?

Sincerely yours, GEORGE M. GOULD.

119 South Seventeenth Street, Philadelphia, Pa., December, 1896.

THE WESTERN OPHTHALMOLOGICAL, OTOLOGICAL, LARYNGOLOGICAL, AND RHINOLOGICAL ASSOCIATION will meet in St. Louis, Mo., the second Thursday and Friday of April, 1897. Physicians desiring to read papers are invited to send subjects to the secretary at once. The railroads have granted a one and one-third fare on the certificate plan. Programs will be issued on February 1, 1897.

BEGINNING with the January issue of the *American Medico-Surgical Bulletin*, that journal will become a semi-monthly. Dr. William Henry Porter and Dr. Egbert H. Grandin will at that time discontinue their connection with the journal, their places being taken by Dr. R. G. Eccles, of Brooklyn. The price of the journal has been reduced to one dollar per year.

DR. THOMAS H. MANLEY, of New York City, has recently been elected Professor of Surgery in the New York Clinical School of Medicine.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"ALIS VOLAT PROPRIIS."

Vol. IV. APRIL, 1897. No. 2.

Original Contributions.

THE ETIOLOGY OF STRICTURE OF THE RECTUM.*

BY JOSEPH M. MATHEWS, M. D.,
Professor of Surgery, Kentucky School of Medicine, etc.
LOUISVILLE, KY.

Gentlemen: I thank you for the courtesy extended me through your committee for the kind invitation to read a paper before this society. At the suggestion of your distinguished President I have selected a subject for discussion within my special line of study, viz., The Etiology of Stricture of the Rectum. I say within my special line only that the idea may be emphasized, that what conclusions may be arrived at in this paper are the result of an actual observation, as well as a careful study of the question. It is certainly not necessary before so learned a body as this, to beg pardon for introducing views which, in the main, may differ from some of the "accepted teachings." It must be confessed that the greatest of all teachers is experience. But what would it avail if a man had witnessed much, unless he could give a reason for the faith that was within him? In matters medical, or surgical, we must argue from cause to effect and take testimony too. It has been the consensus of opinion in the medical profession that no man should become a specialist who had not gone through the crucible of general practice. This is well demonstrated in the consideration of the subject of this paper. Without the knowledge which would enable him to ferret

* Read by invitation before the Medical Society of the State of New York, Jan. 27, 1897.

out the cause of stricture of the rectum, no relief could be afforded the sufferer. Stricture of the rectum is a very important affection. In some few instances it may not threaten life, but in the great majority of cases it does.

The most important part of the subject is its etiology, and, it might be added, the most difficult to settle. But to treat the affection at all rationally its etiology must be understood. A stricture, the result of a simple cause, is not to be treated similarly to one the result of a special diathesis. Nor is a stricture, the result of a specific cause, to receive the same treatment as one that is malignant, and so on. What, then, is the cause or what the causes of stricture of the rectum? The subject is a mooted one, and therefore no dogmatic assertions should be taken. In all fairness permit me to introduce what others say.

In Moullin's Surgery, last edition, page 987, it is said, "Stricture of the rectum may be simple or malignant." How incomplete this division, any student familiar with the subject can see. In the American Text-Book of Surgery, in the chapter on Stricture of the Rectum, will be found these words: "Stricture of the rectum is either simple or malignant. . . . Syphilitic stricture is usually found immediately above the anus, and is most frequently seen in young women under thirty." This is all that is said concerning the etiology of so important a subject. If a stricture of the rectum is either simple or malignant, why speak of syphilis as a cause at all. And, being syphilitic, why is it most frequently seen in women under thirty? Do not men under thirty, and over thirty too, have syphilis? and it may be intimated that some women over thirty have been known to suffer likewise. But it may be that the etiology may solve the question. Ashhurst (Principles and Practice of Surgery, last edition,) says: "Three forms of rectal stricture may be described, the simple, the warty, the malignant." It is inferred, of course, and so said by the author, that by warty is meant syphilitic.

In the Surgery by American Authors (Park), page 449, Vol. II, these words are found: "In thus enumerating the different varieties of ulceration of the rectum we have also enumerated most of the causes of stricture, which in the great majority of cases is a simple result of ulceration." On the same page are these words: "Of the existence of secondary syphilitic ulcera-

tion within the rectal pouch there is no more doubt than of its existence in the fauces and trachea. There is also no doubt in my own mind that this form of ulceration may occasionally result in true syphilitic stricture." To the first proposition, "that the great majority of cases of stricture is the result of ulceration," we could quite agree if the author of the article had used the term inflammation instead of ulceration. For, really, are not all strictures in the rectum, or wherever located, caused by inflammation, be they benign, malignant, syphilitic, tuberculous, or what not?

System of Surgery (Dennis). In this valuable book on surgery this sentence is found on page 521, Vol. IV: "Cases of true gummatous infiltration of the rectal walls, with obliterative endarteritis, do occur, but they are extremely rare." Page 527, same volume: "In the late secondary and early tertiary periods of syphilis ulcerations frequently appear in the rectum, which are quite as characteristic as are their congeners in the pharynx, or post-nasal space. They are chiefly located near the anus, may be confined to the cavity of the rectum, may involve the anal orifice, or may extend outward upon the surrounding tissue. Rarest of all the syphilitic affections of the rectum is a circumscribed gumma, forming in the rectal wall and producing the usual symptoms of a neoplasm."

Da Costa, in a recent work on surgery, merely alludes to the subject in these words: "Stricture of the rectum may arise from syphilitic tissue, from ordinary inflammatory tissue, from cicatrices of operations, from sloughing, from tubercular or dysenteric ulceration, and from cancer."

In a splendid work on syphilis, just issued by the two well-known syphilographers, Hyde and Montgomery, will be found these words: "The questions arise, whether every stricture of the rectum is consequent upon gummatous changes, and also whether every stricture of the rectum, as has been believed, is due to syphilis. With respect to the first question it is clear that while every syphilitic stricture of the rectum is practically due to gummatous infiltration of the rectal walls, it by no means follows that the beginning of the mischief lay in gummatous change. Early in the history of most cases there is a record of uneasiness at stool, and perhaps of blood-smeared feces, indicating that some

local lesions, possibly erosive or superficial ulcers, had existed before the more serious change occurred. The unfortunate part of such histories is the rarity with which the expert explores the rectal pouch before gummatous infiltration can be demonstrated. The second question can be dismissed with some certainty, even in the face of dogmatic assertions to the contrary, Is every stricture of the rectum, as has been believed, due to syphilis?" *Syphilis is the cause of the majority of all cases of stricture of the rectum,* and then the author adds that it may also be caused by trauma, tuberculosis, etc.

The lamented and honored Samuel D. Gross, in his great work on surgery, said, contrary to this, "A syphilitic stricture is occasionally met with in the lower bowel, caused not by any constitutional taint, but by direct inoculation with chancrous matter."

Gant, in his work on Diseases of the Rectum, etc., just out, uses this language in speaking of stricture, and adds his cases: "Syphilis in the form of gummatous deposit within the rectal walls, or from ulceration, certainly heads the list of causes of stricture of the rectum. In fact we believe it to be the cause of as *many strictures as all other causes put together in dispensary practice.* Just what percentage of cases of stricture are due to syphilis is a much mooted question, and has been the cause of much controversy."

Gosselin, the noted French writer, alleged that soft chancres were the only cause of the so-called "syphilitic stricture of the rectum." The English surgeons believe that the condition in question is very rarely the effect of either soft or hard sores, but is caused as the result of constitutional disease.

Cooper and Edwards, two noted surgeons of London, and colaborers of Mr. Allingham in St. Mark's Hospital, in the second edition of their work on Diseases of the Rectum and Anus, say: "Gummatous deposits and infiltration of the submucous tissue are the *most common antecedents* of syphilitic ulceration of the rectum."

Allingham, in the edition of his work on Diseases of the Rectum, page 330, says: "In our experience certainly half the cases of stricture with ulceration have been syphilitic, of a late secondary or tertiary kind." Ball, of Dublin, in his book, "Diseases of the Rectum and Anus:" "Some surgeons, as Gosse-

lin and Mason, would have us believe that stricture of the rectum almost invariably results from chancroids, while, on the other hand, other authorities, such as Allingham and most English authors, discountenance the views held by Mason and Gosselin, and do not recognize chancroids at all as a cause of stricture. The published statements vary so much, according to the views of the surgeon describing them, that the only conclusion we can arrive at from a study of them is that in many instances the origin of the disease is rather a matter of conjecture than a scientifically ascertained fact."

Wyeth, in speaking of syphilitic ulceration of the rectum, says: "The hard syphilitic or true chancre is rarely observed in this region, and when met with is confined to the anal margin. . . . Ulcers of the rectum, resulting from the breaking down of the gummatous deposits of tertiary syphilis, are chiefly seen just along the upper margin of the sphincter muscle. From this point they extend upward and may involve the entire rectum and invade the colon."

In Holmes' System of Surgery, issued in 1881, the author says: "There is one cause, however, of stricture of the rectum which is almost overlooked by the majority of writers, in this country at least. I allude to the venereal poison. As a direct consequence of the application of the poison to the parts by means of unnatural intercourse," and adds, "it is doubtless extremely rare in England. Independent of other instances two well-marked cases of stricture of the rectum occurring in respectable married women who had suffered severely from constitutional syphilis, have lately been under my care. In either case the disease distinctly ensued after the venereal poison had been received into the system."

Van Buren (Lectures on Diseases of the Rectum) speaks of syphilis as "a pregnant cause of rectal stricture." The American Text-Book of Surgery, page 779, under the head of Syphilitic Ulceration, says: "This usually occurs near the anus during the first year after the contraction of the initial lesion. The severer forms of ulceration are met with in the later stages of the disease, and are due to the breaking down of gummata."

The authorities have been quoted indiscriminately, as they have been taken from the shelves in my library. They are intro-

duced mainly for the reason that it could be clearly shown that the subject under discussion is a mooted one, that authors of great eminence differ widely, and that the question is by no means settled, as it will be perceived that I have quoted from quite a number of books just issued. The prime object, however, in selecting this topic for presentation in this paper was to defend the position that the writer has taken in the matter, and which will be found in his recent work on "Diseases of the Rectum, Anus, and Sigmoid Flexure," under the head of Stricture of the Rectum. His views have been criticised in the "Annual of the Universal Medical Sciences" issued in 1892. The critic is my distinguished friend, Dr. Charles B. Kelsey, of New York, and although the language used is sometimes rather caustic, the writer believes it to be in most good humor and intention. No response has ever been made to the criticism, mainly for the reason that the answer could not reach the same audience. There could be no more opportune time, I am sure, and no more righteous tribunal to sit in judgment than the members of this distinguished body of physicians and surgeons. With your kind permission, then, the writer will endeavor to present to you his views on the etiology of stricture of the rectum by attempting to answer the criticism published in the Annual. At the risk of being prolix a number of authorities have been quoted in order to give the views of many, both *pro* and *con*, to the views of the author, and he has refrained from quoting magazine articles corroborative of his views. The expressed belief of the writer, stated briefly, is that sixty per cent. of strictures of the rectum are due to syphilis.

In the criticism alluded to, the writer gives his own statistics in this matter. To quote him: "My analysis of one hundred and thirty-eight personal cases of stricture of all varieties throws some light upon several points in connection with this disease. One is that it is slightly more common in males than in females, the proportion being seventy-six of the former to sixty-two of the latter. This is directly opposed to the statement, found without exception in the older text-books, that the disease is one almost peculiar to women. Another point which challenges attention is that, of one hundred and thirty-eight cases of all varieties, sixty-two or less than fifty per cent. were cancerous; and, what is more striking, of the remaining seventy-six only

seventeen gave any decided evidence of being syphilitic or venereal, thirty-seven are classed as positively non-venereal, and eleven of doubtful nature, but not malignant. These figures do not include the congenital and spasmodic varieties, nor those due to pressure."

Then follow these words: "Mathews, in his address on this subject before the American Medical Association, criticises the classification, but we think without in any way weakening its force or correctness. Indeed he makes some remarkable statements, such as the following: 'I wish to reiterate that, outside of these two well-recognized causes of stricture of the rectum (cancer and syphilis), I am not prepared to admit any other as a well-known, recognized, indisputable cause. I have frequently said that I believe that more than one half of the strictures met with in the rectum were the result of syphilis, and I have often asserted that in no single instance have I ever seen a stricture of the rectum caused by the healing of a soft sore. I do not believe that it can occur.' Mathews introduces his paper by the plain statement that he takes positions contrary to the accepted teachings of the day; and after reading these quotations nobody who knows what the accepted teachings are will be at all inclined to dispute the truth of his assertions that he differs, though we think everybody will deny that his grounds for thus differing have any support, either from pathological study or clinical observation. A writer who boldly ventures to differ from the rest of the surgical world should have strong evidence in favor of his position, stronger than is conveyed in the statements: 'I have not seen' what other men have seen. 'I do not believe' what the greatest authorities have carefully studied and taught."

Reply: To the criticism in regard to the expression "I do not believe," the writer begs to say that there is given every American citizen the inalienable right to have an opinion of his own and to sometimes express the same. My critic says that I make the plain statement that "positions contrary to the accepted teachings of the day are taken." This is correct. Let us see how much this expression differs from his own in regard to his own views. It will be noticed that he uses this language: "This is directly opposed to the statement, found without exception in the older text-books, that the disease (stricture) is

one almost peculiar to women." Yes, and he might have added "the recent text-books too." Wherein does his language differ from mine. Mine is "I have not seen; I do not believe;" his, "This is directly opposed to the statement, found without exception." To use, then, his own words as applied to me may not be inappropriate: "A writer who boldly ventures to differ from the rest of the surgical world should have strong evidence in favor of his position, stronger than is conveyed in 'the analysis of one hundred and thirty-eight personal cases,' that, too, 'when the greatest authorities have carefully studied and taught different.'" My critic believes in disbelieving great authorities more than he will confess.

In this same article from which I am quoting he cites Van Buren, viz., "I can not help thinking that the singular facility with which rectal ulceration may be derived from auto-inoculable sores situated in the female genitals has led many to overrate the frequency of its origin from this source. That it does take place in the lowest class of prostitutes, and not very rarely, my own observation in the Bellevue and charity hospitals in former years compels me to believe. I have seen four or five radiating fissures at the anus, the result of straining at stool, inoculated by vaginal discharges charged with the poison of chronic vaginal chancroid trickling down from the vulva. I have also seen chancroids at the anus become phagedenic and extend within the rectum, and have verified at a later period the existence of stricture of the rectum from the cicatrization, as there was every reason to believe, of this ulceration. I have certainly seen this in several cases, but only in women." Then my critic says: "To those who knew Van Buren, and indeed to the whole medical world, his statement that he had certainly seen any thing several times would carry great weight, and yet Mathews says, 'I have often asserted that in no single instance have I ever seen a stricture of the rectum caused by the healing of the soft sore. I do not believe it can occur.' Well, there is not much more to be said, except to admit that Mathews differs not from Van Buren alone but from 'the accepted teachings of the day,' as he asserts."

The writer had the great pleasure of knowing Dr. Van Buren personally, and desires to say that he held him in estimation as

one of the greatest surgeons of his day. He has left us, in his book on Diseases of the Rectum, the most classical work of the kind ever written. In a long correspondence with him just prior to his death many subjects pertaining to rectal diseases were discussed, including syphilis. After nineteen years' continuous labor as a lecturer, clinician, and practitioner in the department of rectal diseases exclusively, I am forced to differ from so learned an authority in regard to one of the insignificant causes of stricture of the rectum. Were the great man living he would not object. Later on in the article my critic says: "Every day we see the words 'disgusting,' 'loathsome,' 'miserable,' applied to the condition of these patents (colotomy), and Senn, in a recent article, has reached the climax when he says 'he does not believe' that there is a single person living who has been colotomized who had not rather be dead." Well, in the language of my critic as applied to me there is not much more to be said, except to admit that he differs not from Senn alone but "from the accepted teachings of the day." But as my critic has done me the injustice not to print the reasons given by me on this special point, I will be excused if I mention a few on my own account.

First, let us analyze the sentences quoted from Van Buren. He first rebukes those advocates who asserted that a chancroid could often be the cause of stricture of the rectum. Note his language: "I can not help thinking that the singular facility with which rectal ulceration may be derived from auto-inoculable sores situated on the female genitals has led many to overrate the frequency of its origin from this source." After this assertion he says: "That it does take place in the lowest class of prostitutes, and then not very rarely, my own observation in former years compels me to believe." Then he recites one case where a fissured anus became inoculated by pus trickling down from the vulva in an old prostitute, and adds, "I have also seen chancroids at the anus become phagedenic and extend into the rectum, and have verified at a later period the existence of stricture of the rectum from the cicatrization, as there was every reason to believe, of this ulceration," and adds, "I have certainly seen this in several cases, but only in women."

It can be plainly seen that Van Buren recognized that he was discussing a very doubtful question, and therefore uses very

careful language. Several cases embrace all that he had ever observed in his very large practice and long experience. One a case of fissures at the anus inoculated, the others it will be observed are of very different pathology. Chancroids at the anus become phagedenic and extend within the rectum, and a stricture ultimately resulting. No one could question but that a phagedenic condition could be set up at the verge of the anus under certain conditions, and in consequence a stricture result just inside the rectum from a slough. The cause of such may arise outside any chancroidal condition as well as with it. Hence these few or several cases were caused by cicatrization from a phagedenic ulceration superinduced by chancroids.

Van Buren makes a note that these patients were all women. If the soft sore is a cause of stricture, very few cases of the kind have ever been reported. But, as my critic has said that it is a well-established fact that stricture can be produced by chancroidal pus, and that I have not adduced any evidence against the truth of it save my expression, "I have never seen it," you will permit me to cite one or two authorities. First, I beg to quote from my critic's own most admirable treatise on Diseases of the Rectum, the fourth edition of which has just recently appeared. On page 325 will be found these truthful words, in speaking of chancroids at the anus: "They may be single, or multiple, may be situated at any point of the anal circumference, and may cover a large extent of surface. They often extend upward between the radiating folds of skin, and thus greatly resemble simple fissures, or they may spread backward into the fold between the nates, following in extent the natural course of the discharge, but they do not tend to spread upward into the rectum, or to involve the surface of the gut above the line of the sphincter. When they do so, which is rarely, they are of limited extent and well circumscribed. Their existence in the rectum proper has been denied by good observers, the mucous membrane there being believed to furnish no suitable ground for their inoculation. They tend to spontaneous cure. . . . Even when they have extended upward in this way they still heal kindly and almost spontaneously, and no matter how completely they may have involved the anus or the surrounding skin, they seldom, when healed, leave any traces of their former existence. From

this general description it is evident that only under very exceptional circumstances will a chancroid, even when phagedenic, extend far enough into the rectum and cause sufficient deposit to result in stricture."

From the mouth of my critic is taken words to establish the position taken, viz., "I do not believe that a stricture of the rectum can occur from the extension of chancrous pus." But there was an elapse of one year between his criticism and the publication of his book, fourth edition. The belief was not at all original with the writer, but is concurred in by many eminent authorities. Cripps does not believe in the theory of cicatrization from chancrous ulceration, neither do James R. Lane, Alfred Cooper, Coulson, Christopher Heath, and others. Cooper, of London, in his very recent and most excellent work on syphilis, page 198, says: "With regard to the effect of soft chancres it has been asserted by a few French writers, and notably by Gosselin, that these are the exclusive causes of syphilitic contraction of the rectum. My own opinion, however, is that the condition in question can be very rarely the effect of soft sores, but I am not prepared to altogether deny the possibility of such a causation, though the evidence brought forward in support of this view is very inadequate, and to my mind unconvincing." So Mr. Cooper believes with the writer, "that it does not occur." But to proceed to another point of difference: "Mathews' individual connection with regard to the impossibility of chancroidal strictures, though doubtless a matter of great interest, is not nearly as important as his peculiar belief that half of all strictures are syphilitic, for this he attempts to prove, while the other he merely does not believe."

He says: "I desire to quote from Kelsey the following statement: 'There is an old and deeply mooted idea in the minds of the profession that a stricture of the rectum must either be cancerous or syphilitic—an idea founded on error and capable of doing much harm and injustice to innocent people. Again and again have I been able to give great comfort to women suffering from this disease by denying the correctness of this idea, and in my own practice the fact that a stricture is not cancerous adds little weight to the idea that it may be syphilitic. This Mathews says ' is so diametrically opposed to my views and observations

that I desire to say that, in my opinion, fully sixty per cent. of the strictures of the rectum are due to syphilis—not venereal, in the sense that many would have us believe, viz., the infection by chancrous pus or by direct contact, but by deposit, the result of secondary or tertiary syphilis. By a late estimate it is calculated that five million people in the United States are subjects of constitutional syphilis. If it is admitted that one single case of stricture of the rectum can result from this constitutional disease it admits the argument.'"

Then my critic adds: "Syphilis, it is admitted, may cause stricture. There are five million people in the United States suffering from syphilis. Therefore all strictures of the rectum are syphilitic." This critic would in my opinion prepare a poor brief if he was a lawyer. The subject under discussion is whether stricture (all strictures) of the rectum, as Gross and Gosselin said, are produced by chancrous pus. In the last decade or two this proposition has been vigorously fought and defeated. No writer would claim to-day that such was the case; to the contrary no one denies but that stricture of the rectum can be and is produced by being secondary to a constitutional disease. The question only rests now upon the percentage of such cases, and the writer happens or happened to place this percentage somewhat higher than others. A portion of the argument used by the most eminent authorities is that syphilis can in this manner affect the throat —why not the rectum? To aid in the argument it is certainly legitimate to cite the number of persons within the country who are suffering from this constitutional disease which manifests itself in this local manner. If it was acknowledged that phthisis is of hereditary origin, would it not be well to know the number of parents who had diseased lungs, in order to make statistics or render a verdict?

My critic says, as you will note, "Again and again have I been able to give great comfort to women suffering from this disease by denying the correctness of this idea; and in my own practice the fact that a stricture is not cancerous adds little weight to the idea that it may be syphilitic."

That is a strange physician who sits down and explains in detail the etiology of a case to a patient, especially of a subject like that under discussion. The writer confesses that he is not

in the habit of comforting women in this manner. As to doing much harm and injustice to innocent people, he has only to say that, were he to detect syphilitic stricture in an innocent woman, he certainly would not enter into a discussion or disclosure of the matter which might implicate a very good, if perhaps a very naughty, husband. Nor can he agree to the proposition that great injustice is done the "innocent woman," for every surgeon knows that the purest wife on earth might be contaminated by her husband, when surely her innocence or purity is not to be questioned.

My critic continues, "Mathews says, 'Indeed, so firm am I in this belief that if it is a question between cancer and no cancer, and it is decided that it is not malignant, ninety-nine out of every one hundred cases will prove to be syphilitic;'" then he adds, "We can not go into all the ramifications of his article, but we must stop to ask him what the hundredth case would be, recalling his earlier statement that besides cancer and syphilis he recognizes no other cause."

In the first place the writer desires to say that he made no such "earlier statement." By referring to his language it will be seen to read, "I wish to reiterate that, outside of these two well-recognized causes for stricture of the rectum (cancer and syphilis), I am not prepared to admit any other as a well-known, recognizable, indisputable cause." To explain more fully, that stricture from cancer and syphilis is easily recognized from other strictures is well known, and the diagnosis indisputable, viz., that it is either cancer or syphilis. That a stricture of the rectum from any other cause was not "well known, or easily recognized, or was indisputable." For instance, what physician could tell indisputably the cause of an annular stricture? Any trauma, any inflammatory action, might originate it; some would say an injury, dysentery, foreign bodies, proctitis from any cause, pressure, etc. But is there a well-known, recognizable, indisputable cause for every one of these? Certainly not; but for a stricture from either cancer or syphilis there is. By reference to the writer's book on the Diseases of the Rectum, Anus, and Sigmoid Flexure, it will be seen that he describes strictures resulting from other causes outside of cancer and syphilis. This should settle his meaning in the sentence

quoted by his critic, and misconstrued. Another clause of the criticism read: "Mathews says, 'Indeed, so firm am I in the belief that if it is a question between cancer and no cancer, and it is decided that it is not malignant, ninety-nine out of every hundred cases will prove to be syphilitic.'" This expression of the writer's has been so often distorted and corrected that he deems it nearly unnecessary to again say that he never has said, or never intended to say, "that he recognized no other cause" of stricture than the two mentioned. He begs to put in as a refutation the words used in his own book in explaining his position. On page 346, Mathews on "Diseases of the Rectum, Anus, and Sigmoid Flexure," will be found these words: "Indeed, so firm am I in this belief that if it is a question between cancer or no cancer, ninety-nine out of every hundred cases will, in my opinion, prove to be syphilitic, for the reason that stricture, the result of benign ulceration, does not resemble in the least stricture from malignant deposition. To the contrary, syphilitic stricture does to a great degree resemble that produced by cancer. I do not wish to convey the idea that ninety-nine out of every hundred cases of stricture of the rectum are syphilitic by any means, and I have been thus explicit because I have been quoted wrongly a number of times." I trust, therefore, that I have set myself right in this matter. It would be gratifying to the writer to receive an answer to this question from his critic, viz., If a case presents giving strong evidences of being malignant, but is not malignant, what character of stricture is it? Certainly we must from a pathological standpoint account for this cell proliferation which exists to such a degree as to block the rectum with a deposit, and is not cancer.

My critic is opposed to my bringing Allingham to testify on my side, and said that I have misinterpreted what he has said, and adds: "Mathews can not find in this quotation from Allingham any support for his belief that all strictures are either cancerous or syphilitic. Are we to judge that, like the chancroidal ulceration, he has never seen in his several hundred cases any of the kind that Allingham says compose fifty per cent. of all non-malignant varieties, and which I believe account for more than fifty per cent.; or is it because he fails to recognize them when he sees them, and calmly calls them all syphilitic?" In the first

place, I have never said that all strictures "were either cancer or syphilis," though many have said so. As objection is made to the quotation from Allingham in the fifth edition of his book, we will quote from his sixth edition, recently published. On page 330, he says: "In our experience certainly half the cases of stricture with ulceration have been syphilitic, of a late secondary or tertiary kind. If of the tertiary variety, they may be regarded as almost incurable." Now, if my critic will revolve in his mind the cases of "stricture with ulceration," he will see that Allingham's percentage of syphilitic stricture is very large, and this was the point I aimed at establishing. To the remark, "Is it because he fails to recognize them when he sees them, and calmly calls them all syphilis," the writer might ask: "Is it because my critic fails to recognize them (syphilitic) and calls them something else?" Then he cites a case of a young girl who had a stricture caused by a fecal impaction, complicating typhoid fever, and says: "This is, however, the pathology which Mathews denies." Mathews begs very politely to say, again, that he does not nor never did deny any such proposition. He says, and has repeatedly said, that inflammation, the result of trauma, etc., could produce a stricture. The only question raised was how often do we meet with such causes in the rectum. Gonorrhea can cause a stricture in the urethra; it could also cause one in the rectum. How many cases of the kind has my critic ever seen? One more criticism, and I am done. "There are other points in pathology in which Mathews differs from the rest of the world, but none so vital as this. One of them is as to the possibility of dysentery being a cause of stricture. He thinks not, and his argument is that neither he nor his friend Ouchterlony have ever seen a case. The only answer is that many others have, and the fact of its existence is denied by no modern pathologist." Surely my critic does not wish to do me an injustice. I have taken the liberty, it is true, to differ somewhat from others who have written on this subject, but certainly that is a right guaranteed to every one. I did say, and beg to repeat, that in a practice given entirely to the observation of rectal diseases, extending over nineteen years, I have not met a case of stricture that could be attributed to dysentery. The writer also tried to explain the pathology of such a stricture,

and that the rectum would not often be the seat of such. In recounting experiences he mentioned that of Prof. John A. Ouchterlony, Professor of Theory and Practice of Medicine in the University of Louisville, who is known as one of the most noted pathologists in America—a man who was knighted by the King of Sweden lately for his vast knowledge in medicine, and is facetiously referred to by my critic as "Mathews' friend."

Prof. Ouchterlony says: "I call to mind a dead-house experience extending over many years. During the war I made *post-mortem* examinations upon hundreds of cases who died of dysentery—the most malignant forms of the disease, as all will attest whose observations extend back to war times—and I can not remember to have ever seen a stricture of the rectum as the result of dysentery. In the two hospitals to which I was pathologist there were eleven hundred and fifty beds, and we sometimes made as many as five or six *post-mortems* a day. After the close of the war I was for many years pathologist to the City Hospital, but in all my dead-house experience I never saw a stricture of the rectum caused by dysentery." And yet my critic says this is no proof. Ball, of Dublin, says in his most excellent book: "Dysentery has been credited with being the cause of a considerable number of the examples of stricture which come under our notice, but we must remember that the symptoms of rectal ulcer, from whatever cause arising, are in many respects similar to the milder cases of true dysentery. If every case in which there is a muco-purulent and sanious discharge is called dysentery, then indeed the etiological influence of this disease must be considered great; but if the term is restricted to true dysentery, we must admit that the number of cases which can be traced to this disease is small indeed." And yet my critic says this is not testimony. In that exhaustive treatise, "The Medical and Surgical History of the War of the Rebellion," Surgeon-General Woodward has entered very fully into this subject, and sums up the experience of the army surgeons as follows: "No case of intestinal stenosis resulting from the contraction of dysenteric ulcers has ever been reported to the Surgeon-General's office either during the war or since. The Army Medical Museum does not possess a single specimen, nor have I found in the American journals any case substantiated by

post-mortem examination in which this condition is reported to have followed a flux contracted during the civil war."

But my critic says that this is not testimony. The writer's words in his book are: "I do not deny, but my experience has not taught me that ulceration or stricture of the rectum is caused by dysentery; I am sure at least that the cases are infrequent." So it will be seen that I do not so radically differ "from the rest of the world" as my critic would have us believe.

In closing this paper, which perhaps is already too long, the writer wishes again to say that his experience and research and careful study of the question force him to the conviction that fully sixty per cent. of the cases of stricture of the rectum is caused by syphilis. Instead of challenging the virtue or innocence of patients, the recognition of this horrid monster, syphilis, in the production of stricture of the rectum will lead to an early investigation of the cause—the only time in which much, if any good could be accorded the unfortunate patient. On the contrary, its non-recognition would lead inevitably to a wrecked physical as well as mental life. If the writer has done nothing more than draw attention to this all-important factor in the production of strictures, which will lead us to a closer investigation, he will feel fully repaid. The other causes alleged in the production of stricture are but few, and their rarity is easily accounted for. It has been asserted that some strictures are the result of "spasm." If such ever exist, it must be through nerve influence —reflex action—and are not strictures in fact, as no pathology exists at that point of disturbance. Some are said to be caused by pressure, as from abdominal tumors, a heavy or displaced uterus, etc. The rarity of such cases can be attested by the gynecologist. "Congenital" strictures are spoken of by a few. This is a misnomer, as such should be classed as atresias—not stricture—no pathological change having taken place. Tubercle is often spoken of as a cause of stricture. The disposition of tubercular tissue is to break down, not cicatrize, and although the ulceration may be very extensive the constriction can only occur with the healing process, and the fact is patent that these cases are rare. This is evidenced in witnessing the throat when afflicted in a similar manner. Stricture is seldom seen even in aggravated cases. Allingham speaks plainly to the

point when he says: "In these cases there is, as a rule, great ulceration but little stricture." And so it will be seen the list is comparatively a short one, and I beg to remark that my position is not a "peculiar" one, inasmuch as two noted syphilographers, one or two distinguished proctologists, and several others quoted place the percentage of syphilitic strictures as being one half.

923 Fourth Avenue.

M. CHAPUT: RESECTION OF THE RECTUM. (*Le Progres Medical.*)

The following is an abstract of the report made by the author at the Surgical Society of Paris:

"In ten cases of resection of the rectum he counts eight cures, two deaths, one from broncho-pneumonia from ether, the other caused by the rupture of a ureter in a case practically inoperable. Of six cases which were followed up, one case returned after two years with recurrence, with, however, perfect health and no functional disturbances; three cases, or 50 per cent., with no return; in two cases two and five years respectively have elapsed. In two of the cases he observed no prolapse; in one he had used the circular suture; in the other the upper end was twisted *a la* Gersuny.

"However, in the two other cases in which neither of these precautions was taken he had to report prolapse. Chaput claims the operation of Kraske to be practically devoid of danger, and says that according to his observation and experience cancer of the rectum is the one least apt to recur.

"As to technique, he advises to make a preparatory anus in the transverse colon, two days before the operation, with a 'Y' shaped cutaneous incision, to thus resect the coccyx and spare the sacrum, using as much as possible the circular sutures of the two ends. Where this method is impossible he attaches the upper extremity, twisted *a la* Gersuny, to the skin.

"The procedure of Hochenegg (invagination of the upper into the lower) it seems best to reject entirely. The ligatures are useless, the skin is not sutured, and the wound is packed with aseptic guaze soaked in a mild solution of carbolic acid." F. B.

Gastro-Intestinal Disease.

THE DIAGNOSTIC VALUE OF ABDOMINAL PALPATION IN DISEASES OF THE INTESTINES.*

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We may regard palpation as a method which furnishes the most important data for diagnosis of certain cases of intestinal disorders. Its correctness will, of course, depend on the degree of technical expertness in palpating. While there are some general rules in the procedure, it may be said that much depends on practice and experience in this as in every thing else.

(1) The abdomen of the patient should be brought before examination into a state of relaxation as great as possible. (2) The patient should lie on his back, his head should be pressed firmly backward into a pillow, and he should be made to take deep inspirations with the open mouth. (3) The examination is much assisted by flexing the thighs and extending the legs, depending upon the part of the abdomen under observation. In some cases it is advisable to elevate the back, though in other cases the examination must be had while the patient is in the lateral position. (4) The physician should never palpate while standing; in fact, he should avoid every possible disturbing influence, such as the weight of his body; preferably he should sit on the edge of the bed. (5) He should lay his hands flat on the abdominal walls, and he should avoid all severe pressure of his fingers. It is best to begin softly, and allow the pressure to become gradually greater, though usually a more intense pressure would not be necessary. (6) It may happen that the first examination does not give sufficient results. In such a case the intestines should be evacuated by a thorough purgation before another examination is made. (7) The bi-manual examination is often quite valuable. The fingers may be introduced into the

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vagina or rectum, while the abdomen is manipulated with the other hand. (8) In all cases where the tension of the abdominal walls is so great that palpation is not practicable, chloroform narcosis may be resorted to.

(*a*) Palpation of the abdomen determines whether it is sensitive to pain or not. Sensitiveness to pressure in circumscribed spots might fix the seat of bowel-obstruction. We may find the abdomen to be sensitive to pressure along its entire extent, and this may be indicative of diffused peritonitis. General meteorism, developed acutely, produces in itself a high degree of hyperesthesia.

(*b*) More important is the determination through palpation of a resistance, or even of a tumor.

(*c*) We can often feel through the abdominal wall intestinal loops which are movable. While probing for their contour and thickness we may obtain important hints. We must especially aim at fixing the seat of an obstruction, and we may obtain it by palpation if we have previously reduced the meteorism.

(*d*) Sometimes the palpating hand may discover an abnormal resistance, which may prove to be a tumor adjoining the intestine. Or we may feel a fairly sized hard swelling, and this may prove to be a segment of the intestine which through hypertrophy has become thick and stiff and is filled with stagnated material.

The several sections of the intestines call for a method of palpation peculiar to each part.

1. *Sigmoid Flexure.* This is to be palpated in the linea spino-umbilicalis sinistra, and also in a perpendicular direction above the middle of Poupart's ligament. The investigation of the sigmoid flexure being quite easy, it is advisable to begin palpation with it.

Character. It is a cylindrical rope, moderate in consistency; no gurgling sounds are produced during palpation. Though gurgling is observed in various diseases of a diarrheic character, after laxatives, in typhoid fever, etc. In these cases the sigmoid flexure is dilated.

Dysentery. In dysentery the sigmoid flexure is felt as a solid, thick cylinder, is painful under pressure, and no gurgling sounds can be produced. The contents are usually mushy or fluid, as in diarrhea.

Chronic Constipation. In this scybalæ may be felt occasionally, but fecal matter can be easily recognized in the sigmoid flexure as spherical or cylindrical smooth masses which yield when pressed toward the back of the pelvis.

The sigmoid flexure often has peculiarities of the same nature as those of the transverse colon. At the cessation of diarrhea the sigmoid flexure may be reduced below its normal size, and assume a ropy form without the production of gurgling sounds, and becomes as thick as the thumb or index finger. But when by palpation we find that the transverse colon and cecum are enlarged, considerable gurgling is produced in the sigmoid flexure. We may often find the sigmoid flexure without feeling the transverse colon; but, on the other hand, we can not feel the colon transversum without at the same time feeling the sigmoid flexure; there is but one exception, and that is a stricture of the colon in the neighborhood of the flexura coli sinistra. Palpation of the sigmoid flexure in matured persons is a normal phenomenon. Where the sigmoid flexure can not be found, we may be certain that there is some cause for the difficulty. Such, for instance, is hernia within the abdominal cavity.

Differential Diagnosis. It is possible that the sigmoid flexure may be taken for a depressed transverse colon. The latter is recognized by the fact that it can be followed 8 cm. beyond the median line, while the sigmoid flexure disappears into the pelvis. Ptosis of the transverse colon is also frequently taken for the sigmoid flexure, but the latter can be traced as proceeding from the pelvis outward.

Quite frequently it is found that the sigmoid flexure lies above the pubes and directly adjoins the abdominal wall, assuming the form of the Greek omega. Such a position of the sigmoid flexure is clinical.

2. *Transverse Colon.* This lies usually immediately beneath the large curvature of the stomach. Its position varies, a fact which causes a like variableness in the position of the transverse colon. In general it may be said that in average man the tranverse colon is 1 cm. above and in average woman 1 cm. below the umbilicus. When the abdominal organs are depressed the pylorus may be palpated 8 to 10 cm. above the umbilicus, and it is then found to be ropy, has a varying consistency, lies

horizontally on the vertebral column and aorta, is movable in respiration and disappears under the left lobe of the liver.

The section of the transverse colon which is accessible to palpation has either a horizontal direction, as is the case when the transverse colon is high, or it is bow-shaped with the convexity downward. It is quite rare to find that both parts of the bow, right and left of median line, are exactly alike. Usually the right half is more horizontal, while the left rises somewhat abruptly from the median line. Sometimes the transverse colon takes the form of a Roman V.

Contents. In palpation of the transverse colon there are times when we are able to produce loud gurgling sounds which point to the presence of gas and fluid. This has been observed after taking laxatives, in various kinds of diarrhea and in typhoid fever. On the other hand, a cylinder which feels somewhat firm without gurgling is found in chronic colitis. The transverse colon is felt in most cases as a soft rope; under pressure low gurglings are heard; these suggest pulpy contents mixed with gases. Palpation of hard scybalæ in the transverse colon is rare, and, just as is the case of the cecum, points to modifications of the peristalsis of the large intestine. If scybalæ are felt in the transverse colon, they are found to exist not isolated, but in large numbers, and at the same time they exist also in other segments of the colon.

Mobility. The position of the transverse colon depends on the position of the large curvature of the stomach, and it has a corresponding freedom of movement during respiration. The higher the colon lies, the greater the intensity of its movements during respiration. The passive mobility of the transverse colon is very great. In palpation it can without difficulty be moved upward and downward 3 to 4 cm. The consistency of the transverse colon changes often without regard to its contents. It may at first feel firm, and while still under manipulation become soft, and at times it may even disappear under the palpating fingers. This may be explained as a purely physiological phenomenon, in contradistinction to contractions seen in intestinal stenosis or obstruction of the bowels accompanied by cramp-like pains. The palpation of the transverse colon is made easier through its superficial position and relation to the

stomach. In emaciated patients it is marked by sharp outlines. If, in consequence of continued atony, it has become a wide, loose sack, it may be mistaken for a dislocated stomach. In palpating it at the height of the navel we feel about the breadth of the abdomen an extensive festooned arched organ of the consistency of an air-pillow, which can be easily isolated by the hands from the rest of the organs. It can also be differentiated from the stomach by dilating the latter artificially with air.

3. *Ascending and Descending Colon.* The palpation of the ascending and descending colon is very uncertain, as loops of the small intestine lie in front of them. Localization of the flexura coli dextra is also difficult, inasmuch as it lies somewhat behind the liver. The flexura coli sinistra can be determined more easily, a circumstance which is quite important in practice. This segment, when full, gives under percussion a tone similar to that of the spleen. It is found at the left lower border of the thorax, in the region of the spleen, also in the left, back and upward, behind and above in the abdominal cavity.

4. *Cecum.* The cecum can be palpated only when the abdomen is relaxed. The manipulator sits at the right of the patient in the usual manner, with his fingers slightly bent on the abdominal walls at the iliac region, moving them downward and outward in a perpendicular direction above the middle of Poupart's ligament and in the linea spino-umbilicalis dextra. We try to find the iliac fossa against which the cecum can be pressed when palpated. At times the cecum is higher than the crest of the ilium, and in this case place the flat part of the left hand upward under the right lumbar region, making a counter pressure with the right hand. The line which corresponds with the axis of the cecum goes from within downward and outward and transects usually the linea spino-umbilicalis almost at right angles.

Character. The cecum can be felt as a somewhat firm cylinder which becomes rounder and broader the further down we palpate. The pressure produces gurgling. Not infrequently the cecum behaves in this way in healthy persons.

Constipation. In patients with chronic constipation the cecum is often found as a resisting body, firm, pear-shaped, movable, and responding to pressure with loud gurgling sounds. This resistant mass is formed by the stagnation of fecal matter.

Colitis Chronica. In hypertrophy of the intestinal walls the cecum feels like a solid cylinder, broad in varying proportions, contains some gases, but gurgling can not be produced. The cecum is distended after purgatives and in diarrhea of various origin and especially in summer enteritis and gastro-enteritis, but in these cases its walls and its lower border are not clearly palpable. Instead of these, however, we get by palpation loud gurgling sounds as far as the cecum extends. This gurgling is not only heard but felt; where it ceases the limit of the cecum may be fixed. An exception to this is Asiatic cholera in the asphyxiated stage, when neither the cecum nor other sections of the colon can be palpated.

Typhoid Fever. In typhoid fever the cecum is dilated, its resistance is heightened, and it is sensitive to pressure.

Contents. Palpation of the cecum usually produces gurgling sounds, which point to the presence of gases and fluids. The palpation of scybalæ hints at pathological conditions of peristalsis and absorption.

Differential Diagnosis. The cecum can be mistaken for a kidney which has floated into the region of the cecum and has become fixed there through adhesions. Its smooth, bean-shaped form, in some cases also its pulsation at its hilus, make it easily recognizable. It may also be said that the kidney is extraperitoneal. If the colon is inflated, the kidney which lies behind it is likely to disappear. In cases of ptosis of the transverse colon mistaken identification may also take place. The cecum is best recognized by its circular end, while again a continuation beyond the median line can be ascertained in the transverse colon. It is possible also in such cases to find the cecum on the outside of the transverse colon. Sometimes a part of the ileum is taken for the cecum, but the diagnosis can be established by palpating the curved border of the cecum; the ileum disappears at the border of the pelvis.

5. *Vermiform Appendix.* The process vermiformis can not be palpated precisely, because of its delicacy and extreme variableness of position. I need not explain here what is meant by McBurney's point, for it has been spoken of frequently. Its main value in the consideration of our subject is the attention that McBurney has called to the tenderness at the base of the

appendix in the early stages of appendicitis. He located the spot of acute tenderness two inches from the right anterior superior spine of the ilium in the direction of the umbilicus. Touching this subject Dr. R. T. Morris has made some very apt suggestions in a recent report in the Medical Record (February 6, 1897). He reports a case of colloid carcinoma of the appendix. This, he says, had progressed at the time of the operation so far that it included part of the cecum. He was compelled to resect the intestine four successive times, every time that carcinoma reappeared in some part of the body. Sixteen physicians had examined him and had made uncertain diagnoses, and none of these palpated the appendix. If an accurate palpation had been made at the very first examination the several operations could have been avoided. Morris says that 200,000 cases of appendicitis come annually into the hands of physicians in the United States. And from the indications that surgeons get as to the examinations their patients say they have had, not many of these appendices are accurately palpated. When an abscess in appendicitis has formed, and has existed for any length of time, it can be localized as a clearly palpable tumor.

6. *Small Intestine.* In contradistinction to the large intestine, palpation of the small intestine does not give good results. We must, therefore, content ourselves with percussion. Whenever we can palpate the large intestine we can also determine the extent of the small intestine. Where, however, the large intestine can not be palpated, and nothing definite can be ascertained as to its position, then the small intestine must be percussed on the recti muscles, that is, on the part in the middle between the umbilicus and pubes. In cases of typhoid fever, after laxatives, enteritis and also chronic constipation, palpation is attended with moderate gurgling, which under normal conditions is not observed. This gurgling, however, ceases quite suddenly, unlike the gurgling which is observed in the palpation of the large intestine. After two or three pressures it disappears. The loops of the small intestine which lie in the right iliac fossa produce a similar gurgling in typhoid fever and cholera asiatica, only it is of longer duration. The ilium can be palpated in typhoid fever, and it is quite painful and thickened.

Duodenum. The duodenum is very difficult to find. Only when we can discover the head of the pancreas, which it surrounds in the form of a horse shoe, have we an approximate guide for manipulation; it is especially helpful if we can determine at the same time the position of the gall bladder.

(*a*) *Carcinoma.* So far as the diagnosis of the seat of carcinoma is concerned, palpation will give valuable data, for the reason that we ascertain the mobility of the tumor and refer it to a definite location.

(*b*) *Strangulation.* A strangulated section of the intestine becomes frequently recognizable by its dilatation and immobility at a circumscribed spot, disclosing itself through stronger resistance to palpation and asymmetric forward arching in inspection.

(*c*) *Intussusception.* We can prove in fifty per cent. of cases the presence of an enlargement in a part of the abdomen, in children more clearly and more easily than in matured persons. The tumor is usually smooth, hard, cylindrical and irregular; its compass varies from the size of an egg to the fist of a man; and sometimes it grows to the length of the forearm. Not infrequently it becomes noticeable in paroxysms of pain only, and escapes the hand of the palpator in the intervals. Most constantly the evidence of enlargements is present in ileo-cecal and colon invaginations, while it is more rarely present in ileo-colic and iliac varieties. Where a tumor is present it may originate in an ileo-cecal invagination which can be readily found in children; it does not lie then in the region of the cecum but in the part above and to the left of the umbilicus, which corresponds to the transverse and descending colon.

(*d*) *Tuberculosis.* In many cases palpable tumors are recognizable. These are due to the enlargements of the mesenteric glands.

We must not forget that the results from palpation may vary in successive examinations, inasmuch as the perception of certain enlargements may be different upon different occasions. In fact tumors have been known to disappear transiently, and may be perceived again after the lapse of some time.

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CICATRICIAL STENOSIS OF THE ESOPHAGUS, AND ITS TREATMENT BY MODERN METHODS.*

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The remarks of this paper will be limited to the consideration of cicatricial contraction of the esophagus; and, as the question is a very large one, it shall be my aim to touch upon the more important points, especially its management, relying largely upon the full discussion by the members for the elaboration of the subject.

Organic stricture of the esophagus is a most distressing condition, which, unless arrested by some surgical procedure, is almost certain to lead to a fatal issue. Its treatment is fraught with many dangers; especially was this so in the past, and had little to encourage surgeons even to attempt an operation to save these suffering and starving creatures from a horrible death, until recently gastrostomy has come within the pale of advancing surgical improvement, and the mortality following has been so marvelously reduced by ingenious surgical procedures that it holds out to the patient a most positive chance for a perfect relief from starvation, as well as a cure of the stricture, allowing feeding in time by the natural channel again. Although our technique for the management of such cases is most beneficial, there is much to be improved by investigation, which we hope will bring forth much to overcome the as yet insurmountable difficulties in the stenosis that occurs not only from this but other causes.

Before taking up the subject proper, let us briefly consider the esophagus anatomically.

The esophagus is a muscular tube, about nine to ten inches long, composed of muscular, areolar, and mucous coats. Its muscular coat consists of longitudinal and circular fibers which are very strong, especially in its upper portion, these being striped and in its lower portion non-striped. Its mucous and areolar coats are very loosely connected. It begins at the

* Read before the Louisville Clinical Society.

lower border of the fifth cervical vertebra on a level with the cricoid cartilage, and in its course it is in relation with many important structures in the neck and chest, such as the aorta, thoracic duct, left bronchus, and pericardium.

Organic stricture of the esophagus is caused, as a rule, by the accidental passage of some corrosive substance along its mucous surface, as lye, ammonia, and acids, a very small percentage by tubercular, syphilitic, and peptic ulcers—the last named cause is very rare; again from wounds and the long-continued impaction of foreign bodies; the primary cause in all cases being in fact injury and destruction of the mucous membrane resulting in ulceration with its attendant contraction in the process of healing. Although the contraction is very rapid in the presence of ulceration, ulceration is not necessary for contraction to continue indefinitely. In the process of healing infiltration takes place in the areolar space and mucous membrane, and the esophageal walls become thickened and hypertrophied with the rapid development of fibrous tissue, which accounts for the great density of these strictures, and especially so if the ulceration involves to any great extent the muscular walls proper, then the stricture becomes most unyielding. Strictures as a rule are not annular, but they may be so, and in some instances have obliterated the entire lumen of the tube, producing complete atresia. In cicatricial stenosis, the great hypertrophy of the muscular coat, especially seen most marked in the circular fibers and gradually shading off into the surrounding structure from the stricture, prevents for a long time bulging and sacculation; in cases of long standing this prevents, except in rare cases, diverticula from forming. However, after the symptoms of stricture make their appearance, the great thickening of the esophagus, the result of cell infiltration from the inflammatory action due to infection and the constant irritation of different food-stuffs at different temperatures, causes constant muscular spasms, which necessarily results in more or less bulging, or sacculation. This condition with the softened walls make the passage of instruments exceedingly dangerous, except in the gentlest manner. The most frequent site for stricture to locate itself in the gullet is just at the level of cricoid cartilage or just above the cardia.

The symptoms of cicatricial stenosis are at first those referable to the interference with deglutition. This may be rapid in onset in some and slow in others, according to the action of the escharotic, or the extent of the wound. In permanent organic stricture, however, dysphagia develops insidiously. First, solids are swallowed with difficulty, then semi-solids, and lastly fluids; with the last mentioned substance dysphagia becomes prominent. From the absence of sufficient food the patient soon begins to present the features of malnutrition; as the stricture becomes tighter the dysphagia produces, with muscular spasms on the part of the esophagus, an effort to expel all food unable to pass through, which adds more and more to the pouching above the stricture; being unable at times to accomplish this, dyspnea is set up, and vomiting occurs. At first the food in the early stage of the obstruction comes up undecomposed, but later on in the progress of the disease the esophagus, becoming more tolerant, retains the food for some time until decomposition begins, causing spasm of the esophagus, and the food is expelled. In my first case this took place, and I have known food to remain an hour or more and to be expelled by the handful, sour and ill-smelling. At this stage, if ulceration is even slight, cell infiltration goes on rapidly and continues to cause thickening, contraction, and softening of the gullet walls.

The diagnosis of cicatricial stricture depends upon the history of the case together with the subjective symptoms just given, exploration with the bougie making the diagnosis positive. The above symptoms being present, and if on passing a sound into the gullet with great caution a resistance is met with, which very gentle pressure does not overcome, a stricture is positively demonstrated. In organic stricture the sound does not as a rule meet with any rough surface, but usually engages in the stricture and is firmly grasped, which, when slight pressure is used, either slips through suddenly, all resistance ceasing, or fails to pass entirely. As the instrument is withdrawn, it is either tinged with mucus and blood, or not, depending upon the presence of an ulcerating surface.

In the intelligent treatment of stricture of the gullet we should know the exact site of the narrowing, which is accomplished of course by the esophageal bougie, preferably the so-

called *bougie à boule.* In the passage of sounds or guides for the detection of stricture, it can not be too often reiterated that great care should be used, and this is in itself an operation of no minor significance, as most serious accidents have happened from carelessness to most distinguished surgeons from perforation of the softened and sacculated walls.

The treatment of cicatricial stenosis at the present time falls under the method of mechanical dilatation or gastrostomy with some modification of the so-called retrograde dilatation, almost to the exclusion of the operation of esophagotomy, formerly practiced. The treatment by mechanical dilatation is applicable to such cases as can easily swallow semi-solids, which imposes upon the patient an almost lifelong task. In those old enough their sense of reason keeps them under the care of a surgeon, but in children force is to be used, which, as time wears on, becomes both to the little patients as well as to the surgeon a most distasteful task. Mechanical dilatation, when the stricture is high up near the cricoid, is possibly the most feasible plan, and by overdilatation great comfort can be given our patients for long intervals after a considerable time of treatment. The disadvantage of such treatment often consists in the impossibility of keeping the patient under constant observation, and by such treatment the inflamed surface is prevented from having the absolute rest which is a most essential element in these cases. If ulceration is present there is likely to be loss of structure with a tendency to more and more cicatricial contraction. Where this method of treatment is used I think well of the suggestion offered by Ewald to give morphia and atropia hypodermatically to lessen the flow of saliva, as well as the irritation at the site of the stricture. To be of benefit this treatment must be constant and persistent. As I have before expressed myself in a paper upon this subject, I believe that this form of treatment will be limited to strictures high up and of such caliber as will admit of the passage of semi-solids, and that at least fifty per cent. of such cases will be a failure by this method and will require other plans of treatment. In tight stricture, high up, this plan of treatment is of most questionable value.

When this mode of treatment fails, and the stricture is low down or very tight, starvation staring the patient in the face, we

must resort to gastrostomy, with retrograde dilatation by the Kraske or Abbe method when the condition of the patient will permit it, as the best treatment up to the present time. I can not agree with Kendall Frank that forcible dilatation of the stricture through the stomach is quite so safe in the face of the alarming symptoms which have arisen in cases so treated in the hands of its originator. Although this method is perhaps more rapid than any other toward relieving the stenosis, I am firmly convinced, from the experience I have had in these cases, that gastrostomy, with some form of dilatation through the stomach after the method of Kraske or Abbe, is in the main the method of the future, and that not enough stress has been laid upon the important point, that of withdrawing all the irritation possible from the site of stricture and of allowing longer intervals of rest in order to give nature time to clear away the induration of the active inflammation and allow absorption of the partly organized exudates that have been poured out into the loose areolar tissue, just as we would in the urethra when we drain by perineal section. It is a very notable fact after gastrostomy, even in very tight strictures, after a short interval they become more pervious, and after a rest of two or three months a bougie which could not at first be passed will now do so with very little difficulty. This I have experienced by actual test, for in my first case this was proven, and it has been observed by others; in a short time after the stomach had been opened fluid food and semi-solids which had refused to pass can now be swallowed with comparative comfort, which is possibly due to straightening out of the gullet and the tortuous stricture. This point is of great importance, but is often lost sight of by some operators who even after the stomach has been opened will persist in the attempts to pass bougies, causing by their repeated efforts great irritation and possibly damage.

After the stomach has been opened and you have failed to dilate the stricture after one of the methods suggested, it is well to complete the operation, feed at once through the stomach opening, abide your time and occasionally make gentle efforts to pass a bougie, and sooner or later you will be rewarded by the passage of a small instrument, and then your treatment is begun in earnest upon the stricture to fully dilate it, continuing to feed

through the opening in the stomach, never allowing the patient to eat any thing by the mouth, not even milk. By withdrawing all food we lessen the irritation, and the long intervals between the passages of the bougie give the required physiological rest to these structures. In case we are unable to pass a bougie we can resort to the method of Von Haker, of tying a shot on the end of a silk suture, having the patient swallow it, and when it is dropped into the stomach (this is of course previous to the operation), when the stomach is opened we fish out the string, leave it remaining in the gullet to be utilized in carrying out the method of slow retrograde dilatation. Even after these methods, when we are able to dilate the stricture to such an extent that we can utilize the esophageal bougie for the subsequent rapid dilatation, we should persist in not allowing our patient to eat through the gullet for at least one year or more. In my first patient this plan was pursued, and its success has been all that could be desired; she now enjoys perfect health, and she was not allowed to eat any thing by the mouth for over fifteen months; she now eats perfectly, and she has not worn the tube for four years.

The operation of gastrostomy has in the last few years been vastly improved in its technique, which prevents leakage of the gastric contents. When leakage takes place a disagreeable discharging eczema of the surrounding skin occurs. It has been further improved in so far as it is now completed in one stage instead of two, as a rule, which is due to our knowledge of wound treatment. In the method of Witzel, Hahn, Ssabanjew-Frank leakage is almost done away with, and combines with it the safeness almost of the operation in two stages, as the latter will be found the easiest to close when necessity demands, and the small contracted portion of the stomach can be dissected up and sutured. In case it fails the cavity is still protected by the attachment to the parietal peritoneum.

Gastrostomy by the Ssabanjew-Frank method, with retrograde dilatation, was accomplished in the following manner, in the case I present to you this evening:

A free incision parallel with the costal margin was made in order to deliver the stomach easily, and also to easily avoid the mistake of getting the transverse colon, which with a little care ought not to be confounded with the stomach wall, when the

stomach was found and it was brought out and seized as near the cardia as possible, in order to make the opening near that end.

A small opening was made at first with the stomach as well out of the abdomen as is feasible, then through this opening the stomach was washed out thoroughly. Then the opening was enlarged to admit one or two fingers in order to explore for the esophageal opening, which is not always easily found unless the finger is introduced. As soon as it was found, the finger or fingers plugging well the gastric opening, the stomach was pushed well back in order to allow the hand to enter the abdominal cavity, and the finger was then passed up into the esophagus and digital exploration was completed. The stomach was then pulled well out of the abdomen with tenaculum forceps grasping the incision, and sutured to the parietal peritoneum, with as much redundancy as possible; the second incision was made one inch above and parallel with the first incision. The intervening skin was bluntly dissected up and the redundant cone of stomach wall was brought under the bridge of skin and sutured to the edge of the second incision, the first incision being closed.

This dragging of the stomach wall over the rectus muscle acts as a valve in keeping the walls in contact, and prevents leakage; in this case it acted most beautifully, as you will observe the wound in and around the mouth of the fistula is dry. The finger may be used as a means of dilating if possible. When the stomach is within easy reach, by no other means as well as the finger can the cardiac opening of the esophagus be found. A small opening through the gastric wall for the passage of instruments in a blind way is time lost and not likely to succeed. If the stricture is high enough to just be within reach of the tip of the finger, a bougie might be introduced by the side of the finger to dilate the stricture. In case this is done a bougie should be passed through the stricture in the pharynx with a silk suture and the ligature drawn out through the stricture and the bougie withdrawn. In most cases when the stricture is tight this is the only way that passage can be accomplished, as the sacculation makes it difficult to pass from the mouth.

As stated in the first part of this paper, I do not advocate the introduction of such instruments as suggested by Loreto and Frank for rapid dilatation while working through the stomach, for the reason that alarming symptoms have happened to operators while using them; but I prefer, when it is impossible to fully dilate the stricture from below through the stomach with a sound, to use Abbe's string method, introducing a suture with a small soft bougie from below, and saw the stricture while it is put on the stretch, as the yielding structures are not endangered that lay contiguous to the stricture. After sawing the stricture in different places a bougie usually passes, and then a tube can be attached to the suture and pulled up through the stricture and allowed to protrude through the stomach opening and remain two or three days. By means of the suture attached to both ends it can be pulled up and down and used as a powerful means of dilatation until the stricture will admit of dilatation through the mouth by dilating instruments, or conical points can be attached to the suture and pulled through after the suggestion of Kraske. This plan is feasible in quite narrow strictures, when the patient's condition permits of the necessary time to complete the operation. In case the patient is too weak the suture can be left, and a tip or plug of gauze can be pulled up into the stricture and left in twenty-four to thirty-six hours, traction being gradually made upon it until it comes through in order to start the dilatation and prepare for dilatation from above.

As long as the stricture requires treatment, the feeding must be done by the fistula.

Kendall Frank has suggested that dilatation should be practiced and at once close the stomach, and with the after-use of electrolysis prevent re-contraction, and reports a case in which this method was employed. In my opinion favorable cases will be few for this method.

In the case I present to you to-night, I have done the Ssabanjew-Frank operation at one sitting and digitally explored the esophagus. It was my intention to get a string through the esophagus with the help of Dr. Thomas C. Evans, to whom I am indebted for allowing me to operate, but the patient's condition under the anesthetic was so bad after I had about completed my exploration with the fingers, we thought it best to at once estab-

lish a fistula without the necessary manipulation in the esophagus to get the string through.

We completed the operation as stated above, depending upon dilatation through the mouth with rest to the stricture as a means of cure; the operation has been done now four months, and I am now able to pass a bougie without much difficulty.

ETIOLOGY OF APPENDICITIS.*

WHY IS IT MORE COMMON IN THE ANGLO-SAXON RACE?

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[CONTINUED FROM PAGE 52.]

It would certainly seem that the few cases in which an acute twist of the appendix has been found, whether viewed as a primary factor in the process or secondary to necrosis of the appendix, would be at least offset by the possible nutritive disturbances in the appendix occurring in the female during pregnancy, from displacements of uterus and ovaries, or from the pressure of uterine and ovarian tumors. We have noted that the tonsils, composed of very similar tissue to the appendix, are most subject to inflammation at those seasons when sudden alterations of temperature are apt to occur. And as previously intimated, although I can find no statistics on this point, I believe from my personal observations that the same will prove true of the appendix, and that there is something more than mere coincidence in the familiar grouping of these cases.

Diseases of both these organs occur more frequently in men than in women, and occur at the same period of life; are both as a rule associated with or preceded by intestinal disturbances; from their anatomical situations are alike subject to traumatism from impaction of foreign bodies or retained secretions, and are alike prone to bacterial infection.

The influence of heredity upon ultimate disease of the appendix can be reasonably accounted for, as in the case of tonsillitis, by

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the presence in parent and child of a common diathesis, the strumous or rheumatic, with a resulting tendency to hypertrophy and hyperplasia of the lymphoid glands at puberty, a most active predisposing cause of acute inflammatory attacks.

Let me call your attention to some other common affections usually considered as dependent upon the rheumatic diathesis, which my personal experience has convinced me are not infrequently associated with appendicitis and dependent upon the same general causes.

Speaking of valvular heart lesions, the author[13] says: "In 118 cases there was absence of rheumatic history in 40; in 10 of these chorea was manifest; in 13 there was no evidence of any antecedent or probable cause of the valvular trouble. Signs of rheumatism may be very slight in a child, skin eruptions constituting the only obvious signs of rheumatic condition, notably erythema, more rarely purpura or chorea or recurring bronchitis or asthma."

Bowen (quoted by Morrow) in speaking of purpura and acute circumscribed edema, says: "The close relationship and even interchangeability of certain of these cases of purpura with urticaria, with erythema, nodosum, and with angio-neurotic edema, favor the suggestion that the entire group may depend upon some poison, an alkaloid perhaps, the result of faulty chylo-poetic metabolism which in varying doses in different constitutions excites in one urticaria, another peliosis rheumatica, a third fatal purpura."

"Purpura occurs more commonly in the young. According to Gintrac one hundred cases were observed before twenty years of age, ninety in five subsequent decimal periods. The blood changes observed in purpura were diminution in the quantity of red blood cells and solids, in constant variations in fibrin, which was diminished in infectious diseases, and purpura hemorrhagica, and increased in scurvy and purpura simplex. An increase of the white cells, a change in form of the red cells, the presence of embryonic elements and bacteria, and lastly fatty degeneration and inflammation of the small vessels, vascular dilatation and stasis. The disturbance of the capillary system and increase of blood tension should be con-

[13] Keating, Ency. Dis. of Children.

sidered to arise through vaso-motor disturbance of innervation. Hemorrhage may occur into the skin or mucous membrane, epistaxis is frequent, hematemesis is less so. When it does occur it is generally accompanied by pain in the left hypochondrium and splenic enlargement, and the stools sometimes contain blood; hematuria, hemorrhage from lungs and intestine, or cerebral hemorrhage may occur. In purpura rheumatica there is pain in the fibrous tissues of the joints from effusion or hemorrhage into the joints. A variety of so-called rheumatic purpura is not infrequently met with when in addition to the rheumatoid pain there is violent epigastric pain and colic; the pain being followed not infrequently by bloody vomiting and bloody stools."[14]

The frequency of these cases has lately been called attention to by several authors, notably Osler, who considers them as the visceral manifestations of exudative erythema. We find that with these disorders the history of one is the history of all. They are pre-eminently diseases of adolescence; they seem to occur more frequently in women than men, most frequently between twenty and thirty; may be produced under favorable conditions in certain individuals by many drugs, various articles of diet or disturbance of the digestive and generative organs, malaria, trauma, mental or bodily fatigue, or chilling of the surface of the body, and are almost without exception markedly influenced by the seasons, being more prevalent in early spring and fall and in cold, damp seasons. A predisposition to these disorders seems to be hereditary; but, as with tonsillitis and appendicitis, it is highly probable that without some predisposing general condition the chilling of the body, etc., would have little effect.

I would like to call especial attention at this point to the striking similarity in the blood changes found in these cases of purpura rheumatica to those observed in appendicitis, viz., increased leucocytosis, fatty degeneration and inflammation of the small vessels, vascular dilatation and stasis, the disturbance of the capillary system and increase of blood tension being considered to arise from vaso-motor disturbance of innervation. Another point: if such vaso-motor circulatory disturbances, varying from a mere temporary congestion to actual hemorrhage, may take place in the brain, lung, joints, skin, kidney, stomach,

[14] Keating, Ency. Dis. of Children.

and colon, why not much more rapidly in the vermiform appendix, considering that its circulation is so easily and disastrously disturbed by causes insufficient to produce such disturbances in other parts? We may put the question in another way: If such circulatory disturbances occur in other portions of the digestive tract, as a result of general constitutional conditions, when similar pathological conditions are found in the appendix, why should we attribute them to local accidents alone, more especially when such an assumption utterly fails to account for their more frequent occurrence at a certain period of life?

Rheumatism, which is considered the typical manifestation of this constitutional condition, is attributed by Angel Money "to a retention in the system of fatigued products of nitrogenous metabolism, the nervous system forming the secondary element."

"Tonsillitis is very commonly the forerunner of rheumatism, and indeed some have claimed it as a part of the rheumatic process; but if this is the case it must often be its only sign, as there may be no other symptom of rheumatism either before or afterward; but tonsillitis, in my experience, is very often associated with conditions of fatigue and overexertion, and these are just the conditions which bring about considerable uricacidemia, and when tonsillitis with fever supervenes upon this it is hardly to be wondered at that we should have some joint pain or even acute rheumatism." (Haig.)

"The curve representing the rise and fall of rheumatism by months, shows it to follow with considerable regularity the rise and fall of atmospheric temperature. The curve for rheumatism follows the curve for tonsillitis. Clinical observers have noticed and recorded an apparent relationship between tonsillitis and rheumatism, and although most of them have concluded that the tonsillitis was rheumatic, the fact that usually tonsillitis precedes rheumatism seems to indicate that if there is a casual relation between the two diseases, tonsillitis is the most likely to stand as the first link in the chain." (Hare.)

"Acute rheumatism may be produced by any thing which produces a sharp rise of acidity or fall in the alkalinity of the blood at a time when there is considerable supply of urate in the circulation (uricacidemia); but if there is no urate a rise of acidity may produce little or no effect; hence, those who eat much meat and drink most beer and have in consequence most uric acid stored in their body will be most likely to have occasionally considerable uricacidemia, and when exposed to cold and wet, or the sudden onset of any fever supervenes upon this, acute rheumatism may result." (Haig.)

"Age has an important influence on another factor of uric acid arthritis, namely, the absolute quantity of uric acid that is formed, for while in an adult urea is formed in about the proportion of 3 or 4 grains per pound of body weight per day, and uric acid in its natural relation of one to thirty-five would be about .09 to .11 to a pound daily; in a child of three or four urea may be as much as nine or ten grains per pound and uric acid .27 to .30 grains to a pound. A child or young person is thus by nature placed much in the position of an adult who eats largely of meat.

"The daily formation of uric acid is large, and uricacidemia and the arthritic irritation, so far as they depend upon formation for supplies, are correspondingly easily produced. It is little wonder, then, that when young persons who have this extensive nitrogenous metabolism increase it by eating largely of meats, meat extracts, juices, and essences, the introduction and formation of uric acid should be very great and the probabilities of resulting mischief considerable; and that, as pointed out by Bouchard, children fed on meats and meat extracts should often suffer from gastro-intestinal derangements, skin disease, and early migraine, and that rheumatism and its most serious manifestations should come early.

"Another point is, that in children and young persons (probably in consequence of their more active metabolism), slight disturbances will produce great increase of temperature, and rise of temperature means, as we have seen, rise of acidity, the two things (fever and acidity) being probably co-resultants of increased metabolism. Thus the extraordinarily rapid development of girls at the age of thirteen may quite account for their liability to acute rheumatism about that age, as well as to chlorosis and anemia a few years later.

"Young persons then are, from the action of natural causes, often liable to have considerable uricacidemia, and, whenever external cold or light febrile disturbance supervenes upon this, a powerful rise of acidity will drive the uric acid out of the blood into the joints and other tissues, for these tissues no doubt share largely in any general fall of alkalinity.

"A child with gastro-intestinal disturbance and loss of appetite has a headache and slow pulse and the signs of uricacidemia. On this there follows exposure to cold and wet, a slight sore in the throat, a peridental abscess, or other cause of febrile movement, and the resulting fall in alkalinity quickly produces a multiple arthritis with endopericarditis and changes the picture to that of acute rheumatism." (Haig.)

In this way the production of acute rheumatism may be completely accounted for by the action of causes that are to be met

with every day, and the wonder is that any children should escape an attack, but it is fortunately necessary that a good many causes should act together, and this can only occasionally be possible.

"Thus uricacidemia means a large excretion of urate, and where this has gone on for several days the amount in circulation will be reduced. Again, gastro-intestinal disturbance means diminished metabolism and lessened formation of urate, so that, unless external cold or febrile movement supervenes at an early stage, there will not be enough urate to produce the most severe effects on the fibrous tissues." (Haig.)

Whether we believe with Haig that uric acid is formed side by side with urea in definite proportion, and that any excess in the system comes from deficient elimination and excessive introduction in our food, or believe with Fothergill in an excessive uric acid production, as a reversion to a primitive formation, is of little moment to us at present. Whether or not we believe that certain cases of appendicitis, tonsillitis, purpura rheumatica, or exudative erythema and rheumatism itself are due to *one* and the *same* cause, and believe that cause to be *uric* acid, or attribute these disorders to *other products* of *metabolic activity*, is also of secondary importance. It suffices us to know that as a matter of fact the Anglo-Saxon race is especially subject to dyspepsia, rheumatism, and gout; and the children of these dyspeptic and gouty individuals, whether as a result of heredity or of dietetic and climatic conditions, show a marked tendency to hypertrophy and hyperplasia of the lymphoid glands at or before the period of puberty, with a corresponding liability to disease of these structures about the same time; and that these structures, rich as they are in nucleated cells, are intimately concerned in the production or elaboration of the relatively larger quantities of nitrogenous products found in these individuals and at this period.

It is quite sufficient for our present purposes, when we recognize the various conditions which favor the excretion or cause the retention in the system of waste products, or interfere with their elaboration, to note their constant relation to the disorders which we are considering, and that when by diet, drugs, or what not, we control the introduction and excretion of these leucomaines we largely control these disorders.

With this knowledge we have a most reasonable explanation of the part played by heredity in the production of appendicitis, as well as that by dietetic and climatic conditions, and an obvious explanation of its frequency in the Anglo-Saxon race is presented. The frequency of the disease between the ages of ten and thirty is seemingly due to several factors. As previously noted, the lymphoid tissue in the appendix, like that of the tonsil, normally reaches its greatest development and function about the period of puberty, then undergoes like atrophic changes; it is a reasonable assumption that it may undergo similar hypertrophic and hyperplastic changes under like constitutional conditions. I have found this hypertrophic condition in several cases just before puberty in which operation was done sufficiently early to permit of its recognition. The same findings are recorded and commented upon by Fowler in his "Observations upon Appendicitis," although attributed by him to a supposed torsion of the appendix.

(Fowler.) "Reasoning from the findings in the group of specimens of diseased appendices furnished from my own operative work, already alluded to, another source of trophic disturbances would seem to be in progressive hyperplasia or chronic stasis through defective venous return.

"It is not to be denied that other causes are operative in producing necrosis of the mucosa without consequent infection, as, *e. g.*, angulation of the appendix, the presence of foreign bodies in the lumen of the parts (a very rare circumstance, however), enteroliths, etc. It may be definitely stated in this connection, however, all efforts to establish the existence of a specific bacterium which is responsible for appendicitis had failed; and it is now known that when microbic infection occurs it may be simple or mixed, and that several varieties of organisms may find their way into the peritoneal exudate at once. This goes far to prove the presence of other etiological causes than microorganisms; this in its turn strengthens the assumption that the local disturbance of tissue nutrition and resistance are operative to the production of the inflammation.

"Consideration of the so-called relapsing cases of appendicitis throw a different light upon the whole subject, not only in its pathology but also in the practical deductions which should aid the surgeon in his decision regarding operative interference. The cases now under consideration behave in a manner entirely consistent with the microscopic and macroscopic findings. The

meso-appendix is hyperplastic, and so also is the appendix itself the seat, in many instances, of progressive hyperplasia. Everywhere in the specimens derived from this class of cases were found new-formed connective tissue; and vessels regularly show hypertrophic changes involving sometimes all and sometimes one or two of their coats.

"Of the circulatory disturbances in the appendix it may be further said that oligemia will supervene where progressive obliterating endarteritis is at hand, or where torsion is severe, or where a foreign body is present in the lumen of the tube; while hyperemia may originate either from torsion upon the vein, or secondarily as a result of local infection. Both conditions may undoubtedly obtain as a result of nerve lesions. That these conditions may produce effects upon the vitality and resistance of the appendix has already been shown.

"In speaking of non-specific inflammation, it is not intended in this connection to convey the idea that bacteria play no rôle in the process, for it is beyond dispute that they always do. The point here lies in the effort to discriminate between appendicitis resulting from such organisms as tubercle bacilli and those forms of the disease in which several pyogenic organisms seem equally competent to produce the inflammatory condition, and do so in conjunction with the trophic changes.

"Summing up all the facts at our command, it is evident: (1) That appendicitis results primarily from circulatory and nervous disturbances which greatly lower the resistance of the part, and that the vascular and nervous disturbances are due either to immediate torsion of the meso-appendix or chronic progressive hyperplasia of the same.

"(2) That the nature of the inflammation in the given case will be, (*a*) catarrhal, (*b*) purulent, (*c*) fibrinous, (*d*) a combination of the above named, or (*e*) interstitial. These in turn will depend upon the degrees of circulatory and nervous disturbance, and upon the nature of the micro-organisms present.

"(3) It can now be certainly shown that, in the given case of acute appendicitis, this initial attack is resultant from sudden torsion, and it is not the first warning of a chronic infective meso-appendicitis with progressive trophic lesions of the appendix.

"The results of vascular obstruction are directly analogous to ulcus ventriculi, dependent upon endarteritis of the gastric vessels; those of trophic nerve lesions to perforatory ulcer due to trophic nerve lesions of an extremity.

"It has been already shown that the great mobility of the appendix and its mesentery render these structures liable to torsion, and it can scarcely be doubted that this stands in direct etiological relation with the vascular and nervous degeneration."

Given, then, at puberty (or preferably a little later when the lymphoid tissue is still present in considerable amount, but its resistance lessened by the retrogressive changes taking place), an hyperplastic appendix or tonsil, a relatively large quantity of the products of retrograde tissue change stored up in the tissues, and an impressionable nervous system, and we have the foundation of many cases of appendicitis, tonsillitis, and rheumatism.

Under such conditions let a boy indulge in an all-day bicycle run, a violent game of foot-ball, a hard horseback ride, a long tramp with dog and gun, or handle a fork in the hay-field on a hot summer's day (and I have seen appendicitis develop under just these circumstances), or even let him follow a pond-scraper or dally with the fatal bucksaw—only let him get hot and tired, and as a result of muscular exertion and excessive perspiration bring a large amount of fatigue products into his circulation, and let him follow this up with a hearty supper, the next day he is "bilious," digestion is imperfectly accomplished, and fermentative changes begin in the intestine, with the formation of more leucomaines and ptomaines which may be absorbed and afterward eliminated by the kidney or may be deposited in the tissues.

The hyperplastic lymphoid tissue in the lower portion of the ileum, the cecum, and the appendix has its burden doubled, while the absorption of the acids of fermentation may render the solubility and elaboration of these substances more difficult. According to Brunton the effect of dilute acids on the small vessels is to cause their dilatation, with a tendency to increase the exudation of fluids from the vessels and produce edema of the surrounding tissues, and this might further complicate the matter. The irritation of the sensory nerves in the appendix by these intestinal and bacterial products would further increase the local congestion by the dilatation of its arterioles, while at the same time the reflex contraction of the vessels in other parts of the body would raise the blood pressure and increase the rapidity of the stream of blood in the locally dilated vessels; the swollen, obstructed lymph glands, their outlet already inadequate and pressed upon by the exudation, surrounded as they are by a dense and unyielding musculo-fibrous sheath, their vitality thus so lowered would offer but a fertile soil for the development of pathogenic bacteria, which with a few hours' time are only necessary to complete our picture of acute perforative appendicitis.

There is another important factor which we would naturally expect to be most active in the years immediately succeeding puberty, found in the retrogressive changes normally taking place in the appendix, as pointed out by Ribbert; these changes consist in shortening, changes in histological structure of its walls, and narrowing of its lumen, tending to complete obliteration. Deaver[15] ascribes this obliteration to pathological conditions, and quotes Ribbert's findings to show its frequent occurrence, but fails to note Ribbert's unavoidable conclusion that this change was not pathological, but the normal retrogressive process, which takes place (not in the life of the race, but in the life of the individual). As previously suggested, the retention and inspissation of fecal matter doubtless results from some such narrowing of the lumen of the appendix and not from lack of muscular development; and as the lymphoid tissue is irregularly distributed these strictures may occur at several points.

From the greater amount of lymphoid tissue usually deposited about the orifice of the appendix we would expect stricture most frequently at this point. Some members of this Society may recall in this connection the first appendix that I exhibited to the Society, in which this condition was beautifully shown. The liability to accidents from the retention of fecal matter or secretions during this stage of retrogression would be in inverse ratio to the age of the individual, the percentage of obliterations of the lumen of the appendix increasing directly with age.

Why does appendicitis appear four times as often in men as in women? This is about the proportion as given by most writers, but it is very probable that this is too high, as many mild cases especially are apt to be overlooked in the young female and during pregnancy.

Rheumatism, gout, and tonsillitis are more frequent in the male, all ages considered, but rheumatism is more frequent in the female from about twelve to fifteen years of age, while purpura rheumatica and its allied affections are more frequent in the female at a little later period. If all these affections are influenced by the same general conditions, why should appendicitis alone occur with greater frequency in the male at all ages (admitting for sake of argument that it does)? The male appendix

[15] "Treatise on Appendicitis."

averages four fifths of an inch more in length than the female; its caliber is larger, and it is more liable to hypertrophy or hyperplasia. It would consequently be more liable to circulatory disturbances and acute inflammation. The obliteration, partial or complete, of its lumen would not occur so early, and its originally larger caliber and greater length would increase the chances of the retention of fecal masses as this narrowing of the lumen progressed.

The general habits of life (diet, exposure to weather, exercise,) of the two sexes may also render the male more liable to the disturbing influences which would bring about disease of the appendix.

The ligament of Clado, when it exists, would seem to me to be rather a detriment than otherwise, and would increase the liability of the individual to disease of the appendix, in that the appendix would be more than likely to participate in the circulatory and septic processes so frequent in the pelvic organs, or have its functions interfered with by traction from displacements of these organs, or from the assaults of the progressively aggressive gynecologists. (They have been accused of all the other crimes in the calendar, we might add this.)

We must consider another marked difference in the sexes, however, than these mentioned. The development of girls, as shown by the annual increase of weight, as well as by other signs of metabolic activity, is greatest about the thirteenth year, and takes place very rapidly and precipitately, while with boys this development is much more gradual, and not obtained until the sixteenth year, and this yearly increase in weight in the male continues, although in lessened amount, for several years later.

"This very rapid growth and development in girls (according to Haig) entails a corresponding rapidity of tissue change, with a very large formation of uric acid and urea per pound of body weight, this being always much greater in the child than in the adult. But high urea formation is always accompanied by high acidity, that is to say, the urine will be highly acid and the blood lowly alkaline. The blood alkalinity being low it will be but a bad solvent of uric acid, and hence a considerable portion of the large amount of urate formed in these years of active metabolism will not be held in solution in the blood and excreted, but will be retained and deposited in various parts of the body, giving local signs of which we will speak presently.

"Unfortunately, later on, a girl's metabolism falls very greatly, and by the end of the eighteenth year her increase in weight is almost nil; with this there is a great fall in the formation of urea and of acids, and the blood becomes more alkaline; as a result of this it becomes also a better solvent of uric acid, and it now takes up and passes into the urine so much uric acid, probably several hundred grains, as was stored in the tissues during the preceding period of active metabolism, from twelve to fourteen; hence from sixteen to nineteen, or later, she will have an excess of uric acid passing through her blood and will suffer from its effects on the blood decimal, namely, chlorosis.

"Now I think that girls in their more early development will probably form more uric acid and urea per pound than boys in their later development, and when later on the girl's increase is almost nil, the uric acid previously retained will pass through the blood both in greater quantities and more suddenly than it does in boys, whose increase is for several years later very considerable and their acidity not so low; I therefore add a line representing the probable effects of the girl's increase in weight on the formation of urea and acids, and a broken line below showing the effects of this on the excretion of uric acid, and from these we see at a glance that the chlorosis and anemia of eighteen are the result of the passage of an excess of uric acid through the blood, which again is the result of a previous storage of this substance from twelve to fifteen. Add to this that just at the time when a girl's increase of weight is coming down, and her urea and acidity falling, menstruation is established; and that, even if this does not upset digestion and appetite, it often obliges girls to keep quiet for several days, so that its result is to still further reduce urea and acidity and still more markedly flood the blood with uric acid, thus completely accounting for the increase of her chlorosis and the functional troubles so often met with at the menstrual period."

We can thus account for the liability of girls about the thirteenth year to rheumatism, as well as to chlorosis and purpura rheumatica a little later on.

It seems evident that while rheumatism results from the sudden precipitation of urates (possibly influenced by the lactic acid or other products of muscular activity), tonsillitis and appendicitis and the vascular disturbances and the blood changes of chlorosis, which with the irritable condition of the nervous system (most marked in women about the menstrual period) are apt to result in exudations or hemorrhages, are due to the circulation of these suboxidation products in the blood for a variable

length of time. It is interesting to note that these local disturbances are prone to occur in tissues that have acid secretions, and it is not improbable that the capillaries are mechanically obstructed by local precipitation as well as by being chemically irritated. That these more severe blood vascular disturbances are capable of producing acute attacks of appendicitis I know to be a fact, and that appendicitis is not infrequently produced in this manner I believe to be equally true. This opinion was forced upon me long before any explanation of its occurrence was apparent.

I briefly report two cases in which this relation of cause and effect was unquestionable in support of my positive statement of fact. The first was that of a boy, age fourteen years, taken sick early in the summer, a year and a half ago; this boy I had previously attended in two slight attacks of tonsillitis; his sister, twenty-four years of age, had been under my care on several occasions during a period of three years. She was chlorotic, suffered with dysmenorrhea, indigestion, and tonsillitis. Several times she sent for me, complaining of violent colicky pain, usually located in the left hypochondrium, and for which I could find no assignable cause; on one occasion this was attended by vomiting and an outbreak of urticaria.

A second sister, seventeen years old, suffered two attacks of tonsillitis and a mild rheumatic attack two years ago; last year she stopped school on account of sick-headaches.

I first saw this boy about 12 o'clock in the day; he had been employed in a milk depot for about a week, and the day before my visit had done an unusually hard day's work for a boy of his age, handling the heavy cans, etc.; while overheated he drank quite a quantity of cold milk before he left the dairy, and the next morning awoke, nauseated, and with a sore throat. A little later a number of large erythematous wheals appeared over the body, and almost simultaneously he complained of a violent pain in the region of the appendix. A diagnosis of appendicitis was made at my visit a few hours later, the classical signs being all present; his temperature was 100.2° F., pulse 90. No remission of symptoms following the action of a saline and an enema, he was removed to the Norton Infirmary and operated upon at nine P. M. the same day. He was taken to the infirmary at the special

request of his sister, who informed me that they were all completely broken down nursing her father (whom I had never attended), a man sixty-six years old, who was then in his fifth week of a typhoidal attack and in a condition of septic delirium. Ten days later, when the boy went home, I was asked to look at the father, who was still holding on; the typhoid proved to consist of an enormous collection of pus surrounding the remains of a disorganized appendix. The pus had worked up behind the liver and down under Poupart's ligament along the femoral vessels; a free opening, front and back, gave him relief, but his constitution was completely shattered, and he died eight months later.

On opening the abdomen of the boy the appendix was found pointing downward and partially overlapped by the cecum; its walls were hyperplastic and quite hard from the dense infiltration; the meso-appendix was thickened and extended almost to the tip of the appendix. The distal third of the appendix and the corresponding portion of the meso-appendix presented a dark, somewhat mottled appearance from extravasation of blood into this hyperplastic tissue; the lumen of the appendix was pervious, though somewhat compressed, and contained only a little mucoid material and soft fecal matter. There was no torsion of the appendix, nor any other apparent mechanical obstruction to the circulation, and no reasonable doubt could exist but that the circulatory disturbance in the appendix and that taking place in the skin were identical.

Second case was in a boy, age fifteen, operated upon January 5, 1895. This boy's mother has suffered from tonsillitis and rheumatism; one aunt has had rheumatism, a second, exudative erythema. His father has been a great sufferer from rheumatism and migraine, and now has a heart-murmur. He also frequently shows evidence of nutritive disturbances in the skin by an outbreak of boils, which the most vigorous antiseptic treatment has always failed to relieve until used in conjunction with the salicylates, colchicum, etc.

I first saw this case in the fall of 1890; he was then suffering from tonsillitis and nose-bleed; from that time until the spring of '94 I attended him at various times with tonsillitis, nose-bleed, colic, and one attack of urticaria; none of these attacks were very severe. In May, 1894, after a horseback ride, he had a severe

attack of colic, attended with vomiting; his pain was general over the abdomen, and unattended by any local tenderness or muscular rigidity; his temperature was slightly above normal. His mother stated at the time that he had complained of pain, and had vomited after eating on several occasions in the week immediately preceding this severe attack; no appendicular trouble could be made out.

The following August he had a second attack, more severe than the first, and accompanied by fever and vomiting, with considerable pain in the right iliac region, which had passed off at the end of a week when I saw him. This attack followed a fatiguing ride out into the country. On November 22d following he started for a several days' hunt in Indiana. The first day out, the weather turning very cold, the frozen ground making walking very tiresome and uncertain, late in the afternoon he made a misstep and fell, cutting a deep gash in his hand, which necessitated a return home that night. Next day he had an attack of bronchial asthma, accompanied by nose-bleed. This attack lasted, with intermissions, until December 6th. On January 6, 1895, I was hurriedly called, to find him suffering from severe colic and vomiting. He was very nervous and rolling around over the bed; temperature 99.2° F.; pulse 100; abdomen was not distended; the pain was most intense under the border of the ribs on the left side and in the right iliac region; tenderness on pressure and rigidity of right rectus. No cause for the attack could be assigned. Enema of glycerine and water brought away only a little gas; calomel, gr. $1\frac{1}{2}$, was retained, but saline was rejected. Five hours later he began to cough again and his nose to bleed.

Twenty-two hours after the commencement of the attack his temperature was 100.6° F.; pulse 105; he had vomited several times and his bowels had not moved. An increasing tenderness, etc., in the region of the appendix warned me against further delay, and notwithstanding many misgivings as to his general condition his abdomen was opened; the appendix immediately presented. There were no adhesions or other evidences of previous inflammatory trouble. The appendix, which was exhibited shortly afterward in this society, was three inches long, the mesoappendix extending about half its length; it was tensely dis-

tended, containing some muco-purulent fluid with fecal odor and a good-sized blood clot; hemorrhage had also occurred into the walls of the appendix, which were almost black in color and on the verge of rupture; there was no evidence of torsion. The case went on without special incident until the eighth day, when the stitches were removed from the very small wound, union being perfect. On the ninth day his stomach became deranged from some little error in his diet; this was followed by severe abdominal pains, chiefly in the left side; as he expressed it himself, the *region* of the *wound* was the *only place* that *did not hurt.* He became quite hysterical after this and presented every possible phase of purpura rheumatica: pain and edema in the muscles and joints, urticarial lesions of all styles, bleeding from the nose, stomach, intestine (always preceded by a severe colic), and the kidney; purpuric spots developed on the legs, but the rest of the body was free, perfect recovery finally taking place. Could the presence of the wound in the abdominal wall over the cecum, through reflex nerve action, have accounted for the freedom from pain in this locality, while he suffered repeated attacks in other portions of the abdomen?

Just in the midst of this affair his sister, a year younger, who was also subject to tonsillitis, nose-bleed, and rheumatism, while skating fell into an air-hole and became thoroughly chilled before her wet garments could be changed. This was quickly followed by an attack of fever, her temperature reaching at its highest point 104° F.; this lasted for three weeks and was attended by nose-bleed, some puffiness and pain about the knee-joints, erythematous nodes over the tibia, and an apparent swelling of the liver and spleen; a diagnosis of typhoid fever was made by two experienced consultants.

The question at once suggests itself, why, if these more violent vascular disturbances are more common in the female, should they involve the appendix more frequently in the male?

These disorders, we have noted, are usually brought on about the menstrual period, when this function is deranged, the metabolic changes disordered, and the nervous system in an irritable condition.

Brunton calls attention to the great difference existing between the vessels of the intestine and those in some other situa-

tions, noting the fact that the former are more under the control of the vaso-motor center, and that when this is stimulated they contract greatly; and further, that this may be produced by irritation of the vaso-motor center or the peripheral terminations—directly by the action of drugs, indirectly by the accumulation of carbon dioxide in the blood, and reflexly through the sensory nerves.

These conditions are so perfectly fulfilled in the dysmenorrheic female that it is not surprising that she suffers at this period with vaso-motor disturbances, whether these are produced altogether through the vaso-motor system or in addition there exists an actual blocking of the capillaries from colloid precipitates, but it is not improbable that the irritating waste products and carbon dioxide accumulating in the blood would cause contraction of the intestinal vessels and diminish absorption and the functional activity of the intestine; the amount of blood in the intestinal vessels would doubtless be further diminished by the congestion of the pelvic organs and by the reflexes acting on the intestinal vessels.

This reflex influence on the intestine from an irritated ovary was thought by Brunton to be a frequent cause of constipation in neurotic females, and the truth of this opinion is supported by the effect of small doses of opium in such cases, which by inhibiting or transferring this reflex nerve influence he found to exert a laxative action; and it seems to me altogether probable that this irritation of the ovary and uterus at the menstrual period and its reflex influence on the intestinal circulation may be another important factor in the relative immunity of the female at this time from circulatory disturbances in the appendix.

This might account for the infrequency with which the appendix is involved in comparison with other organs in women, the subjects of purpura rheumatica, but even admitting that no such influences exist, and that these acute vaso-motor disturbances when they do occur are as apt to involve the appendix of the female as that of the male, it is by no means certain that such disturbances occur so much more frequently in the female than in the male as to materially affect the general result.

The cases reported, however, in which exudation and hemorrhage took place into the appendix during the progress of an

attack of purpura rheumatica in the two boys, while their two sisters, presenting much the same lesions in other situations, failed to develop any appendix trouble, are at least suggestive.

Another point to be taken into consideration is the relative infrequency of these severer vascular disturbances even in the female, for as a rule as soon as the menstrual functions are well established the susceptibility to these affections is markedly diminished.

Some light may be thrown upon the influence of menstruation upon appendicitis in the future by noting the frequency of the primary attack in women before puberty, during the sexual period, and after the menopause. The influence of pregnancy would be two-fold, first, through its influence on the metabolic processes; secondly, by the pressure effects of the rapidly enlarging uterus.

The points to which I would especially direct your attention are briefly these: We find no evidence to justify the assumption that the lymphoid glands of the appendix differ materially in their development and function from similar glands in the ileum and colon or other situations; therefore, in the absence of such evidence I see no reason to doubt the findings of Ribbert in the four hundred appendices examined by him; nor the correctness of his conclusion that the appendix, by virtue of the lymphoid tissue of which it is largely composed, reaches its greatest development at puberty, and soon thereafter undergoes a process of retrogression, consisting of shortening, changes in the histological structure of its walls, and more or less complete obliteration of its lumen, similar atrophic changes being known to take place in other lymphoid glands at this same period.

We find no evidence to support the assumption that the lymphoid glands of the appendix are uninfluenced by constitutional conditions and other agencies which tend to bring about hyperplasia or acute inflammation of the tonsils or the lymphoid glands of the colon and ileum; therefore, when such changes are observed, taking place coincidently in the appendix and these other structures, we must conclude that the same conditions are at work rendering the soil favorable for bacterial invasion.

Again, we have noted the practical identity of the vascular and nerve lesions of appendicitis with those found in the intesti-

nal lesions of exudative erythema and similar affections dependent upon the rheumatic diathesis. We find the same pathological conditions in ulcers of the skin dependent upon this same diathesis.

"Quenu[16] found in the microscopic study of the skin and other tissues in so-called varicose ulcers of the leg, the veins varicose, dilated, and surrounded by new connective tissue, which was forming and condensing at the same time. The arteries were affected by endarteritis and atheroma, and occasionally there was thrombosis of large branches. In the nerves there was a new growth of connective tissue, beginning around the dilated capillaries and surrounding the nerve fibers, which afterward degenerated on account of the pressure exerted by this tissue as it contracted. These alterations were found in nerves at a long distance from the point of ulceration, and even in those nerves which were not distributed to that part of the leg. He thinks the changes began in the vessels, then attacked the nerve, and finally caused trophic alterations and ulcerations of the skin. He believes himself able to exclude an ascending neuritis secondary to the inflammation of the ulcer."

"Shrieder[16] investigated a number of cases of ulcer (that could not be ascribed to any specific cause) and found in the great majority of them evidence of atheroma, varicose veins, chronic bronchitis, skin eruptions, heart affections, headache, joint troubles, ribbed nails, and other symptoms of that peculiar constitutional vice known as gout or lithiasis by England writers. The cause or causes which produce this inveterate disorder of the system are as yet but poorly understood.

"But the extensive trophic changes which it occasions in all the tissues of the body form a reasonable basis for the hypothesis that it may also be responsible for the nutritive changes upon which depend the occurrence of ulceration in cases in which no more definite cause can be detected."

In the face of such evidence we can but conclude that the similar vascular and nerve changes found in the appendix are the results of nutritive disturbances of constitutional origin, and not secondary to torsion of the appendix and bacterial infection, as heretofore thought.

[16] Ref. Hand-Book Med. Science.

Strictures of the appendix may be due to inflammatory bands or to the contraction of cicatricial tissue, the result of previous ulceration, but certainly such an origin is most improbable in the majority of such cases, and it seems unquestionable to me that the great majority of these contractions are the result of the retrogressive changes taking place in the appendix after puberty.

The more frequent occurrence of appendicitis about puberty and in the years immediately following would strongly indicate the part played by the functional disturbances in this hypertrophied lymphoid tissue in its production.

Acute cases have been reported where the mucosa was extruded from its muscular sheath intact, which could scarcely occur if the whole blood supply to the appendix were cut off by torsion or the submucosa had become necrotic by means of infection through the mucosa which remained intact. In the present state of our knowledge, or, more properly speaking, ignorance, the vascular disturbances which give rise to necrosis of the lymphoid glands of the tonsil, cecum, or appendix, or in milder cases only to such nutritive changes that the lessened resistance permits of bacterial invasion, seem to be brought about by, first, blocking of the capillaries by the precipitation of colloid nitrogenous bodies; second, disease of the walls of the small vessels from the presence in the blood of deleterious substances; or, third, vaso-motor disturbances, (*a*) irritation by chemical products, (*b*) reflexly. The important point to us just at present, however, is that these *vascular disturbances* are so intimately *connected* with the *rheumatic diathesis*, which we all recognize but do not as yet thoroughly understand. Whether calomel or any other drug can cause a precipitation of colloid bodies in the capillaries of the lymph glands by combining with their metabolic activity, just as such precipitation takes place in the products of the laboratory, is a matter purely of conjecture. This is equally true of the action of salicylate of soda in the removal of such deposits; but may we not find that it is by some such influence on the metabolic processes going on in these glands, rather than by their direct antiseptic action, depends the beneficial results of salicylate of soda, guaiac, and guaiacol in appendicitis, tonsillitis, and typhoid fever?

Finally, I would have you note the two cases reported in which actual hemorrhage occurred into the appendix during an attack of purpura rheumatica. I have been able to find one case in the literature of the subject where peritonitis and death resulted from necrosis and perforation of the stomach from such a hemorrhage into its walls, but no mention of even the possibility of such an acute vaso-motor disturbance causing hemorrhage and necrosis of the appendix. This, in my opinion, is not because such cases are so rare, but because they have been unrecognized. The consideration of the treatment of appendicitis has no place in this article, nor have I any suggestion at present to offer the members of this society, but for the benefit of those who stand less in awe of a necrotic appendix than do we, and who by my incidental allusions to the action of drugs might be encouraged to place undue reliance upon medicinal treatment in this disorder, I would recall the result in the case of the child treated by salicylate of soda that I have previously quoted from that most interesting work of Haig; and while I have never advocated immediate operation in all cases of appendicitis as soon as the diagnosis was made, regardless of time, place, or circumstances, nor regarded the physician as possessed of less intelligence and diagnostic ability than the surgeon, I have always advocated an immediate diagnosis, and I would most earnestly insist that with our present knowledge of the frequency and the rapidity with which necrosis and perforation may take place in seemingly mild cases of appendicitis, and the almost inevitably fatal result following without immediate surgical interference, that the physician who treats an acute attack of appendicitis, even of mild character, without making provision for immediate operation, should the necessity arise, does his patient a grave injustice; and if he does not allow the surgeon, upon whom he will shift the responsibility of this operation and the ultimate result, to see the case at the earliest moment and have a voice in determining when this necessity does arise, he does both a grave injustice.

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Abstracts and Selections.

NEW METHOD OF PERFORMING INTESTINAL ANASTOMOSIS WITH SPECIAL REFERENCE TO ITS ADAPTABILITY TO INGUINAL COLOSTOMY AND SUBSEQUENT RESTORATION OF THE FECAL CURRENT.

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NEW YORK.

[*Medical News.*]

That so many ingenious methods of performing intestinal anastomosis have an active and practical existence is proof that none of them is entirely satisfactory. Without mechanical contrivances it is a most difficult operation, and calls for exhibition of the highest surgical skill; with mechanical aids it is less difficult, but these have not yet proved entirely reliable or harmless. The mortality as it stands to-day is high, partly because of dangers inherent in the operation, and partly because of delay entailed by a course of temporizing therapeutics, thus impairing the patient's strength. The great activity of surgical thought in this particular field will no doubt sooner or later solve the question of a rapid and safe method of approximating the two ends of the severed intestine; and it is with the hope of contributing to this achievement that I offer the results of my individual efforts.

The method to be detailed is the outcome of thought directed toward improving the spur in inguinal colostomy. It can readily be seen that if the spur stands flush with the skin surface, no fecal matter can enter the portion of colon beyond the site of operation, but the spur formed by suspending the gut over a supporting pin or rod has no thickness or rigidity, and the constant dragging weight of the intestines within the cavity soon pulls its upper border below the level of the skin surface, thus permitting passage of fecal matter into the lower portion of the

intestine (Fig. 1). It occurred to me that the mesentery of the loop might be folded so as to stiffen the spur by stitching together both sides of the two limbs of the flexure. This, being tried on a dog, was found to furnish the desired remedy, and, furthermore, was capable of easy and rapid execution. As this acute flexion of the gut upon itself forms a septum fully an inch in width between the two rows of sutures, it will be readily seen that simple division along the center of this spur removes all obstacle to the flow of the current beyond the abdominal opening into the lower portion of intestine. We therefore have a simple means of restoring continuity when the proper time arrives.

FIG. 1.

Diagram showing the intestinal spur drawn below the level of the skin surface by intra-abdominal tension, and fecal matter passing into lower portion of intestine.

Five dogs have been subjected to the operation in its two different applications, viz: (1) Enterostomy, as recommended for intestinal anastomosis and temporary anus, by *excluding* the mesentery from between the two rows of sutures, and (2) colostomy, as recommended for permanent anus, by folding the mesentery between the two limbs of the flexure. The details of two of these experimental operations are given here, the others being reserved for a subsequent paper. A large male dog was chloroformed by the author, November 13, 1896, and the usual incision for colostomy made. The parietal peritoneum was stitched to the skin, the colon identified and drawn through the incision. On account of the short mesentery but six inches could be exposed. The two limbs of this loop were laid side by side, acutely flexing the center, and sutured together for a distance of three inches. The first line of sutures was placed parallel with and close to the mesenteric border, the second row along the line of the convex borders. This was done by a continuous suture, requiring but one long strand of silk. The loop was now returned to the cavity until the point where the suturing com-

menced was on a level with the skin, and stretched into the abdominal wound. The protruding cap of the knuckle was clipped off close to the surface. Three days later the dog was again anesthetized, and the artificial anal orifice washed with a stream of warm bichloride solution. The septum between the two intestinal orifices could be clearly seen, and by passing the blade of a pair of blunt-pointed scissors into each opening was divided for a distance of two and a half inches. The bleeding

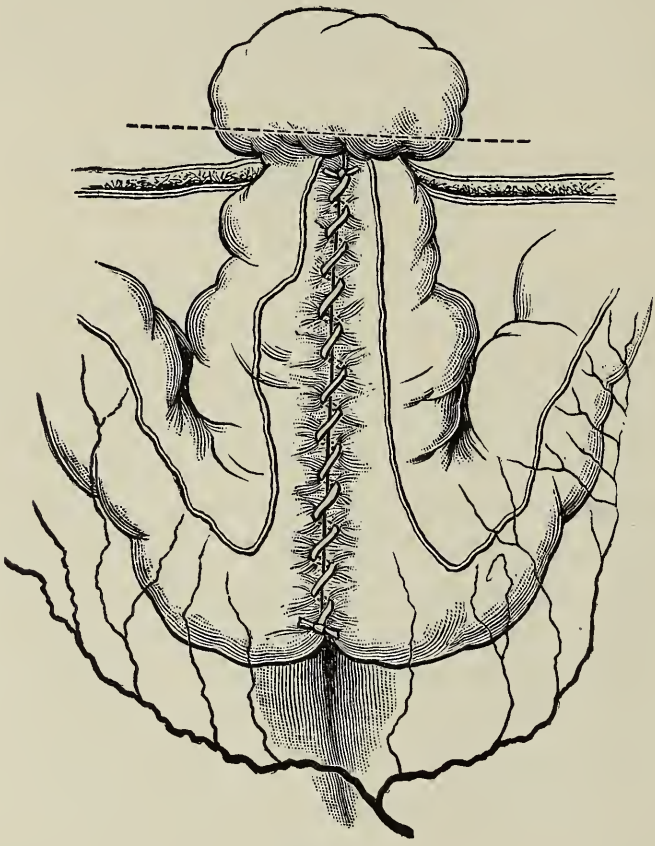


Fig 2.

Intestinal anastomosis. Showing one side of the loop after it has been sutured, passed back into the cavity and stitched into the abdominal wound. The lesion is left protruding, and the dotted line indicates where protrusion is to be clipped off.

was very insignificant, and *required no hemostasis.* The abdominal wound was closed by Byrd's method. For a number of days some fecal matter oozed through the wound, but it eventually closed, and the dog is perfectly well. This dog is being preserved to show at a coming medical society event.

Wishing to test the method in the hands of another operator, Dr. J. Shelton Horsley of this city kindly chloroformed a small

male dog on December 15, 1896, and performed the operation as recommended for permanent colostomy. The sigmoid flexure was drawn through the incision and a loop sutured together for a distance of three inches. The mesentery in this case was *folded in* between the two limbs by running the line of sutures on each side midway between the convex and mesenteric borders. After passing back the sutured loop and stitching it into the abdominal wound the protruding cap was clipped off. One week later the dog was killed and the specimen removed. The gut presented two circular orifices at the abdominal opening, with the septum between clearly defined and standing flush with the skin surface. The lines of sutures were buried beneath a layer of organized lymph, and the two opposed walls composing the spur were firmly welded together by this same material. This spur was extremely firm and rigid, measuring fully one third of an inch in thickness. Looking at the specimen from the outer end, it resembled the muzzle of a double-barrelled shotgun, *the width of the septum measuring exactly the same as the diameter of the dog's colon.*

Suturing the parietal peritoneum is a procedure of great value. The cellular planes between the muscular layers are shut off from infection by the feces, preventing cellulitis, abscess, etc. The mesentery in dogs being short, but six inches of gut could be exposed, which gives a loop of only three inches when doubled upon itself. In man eight or ten inches should be brought through the incision when possible. This gives a spur four or five inches long, which can be divided for three or four inches to furnish an ample anastomotic opening.

Without going fully into the defects of the present methods of intestinal anastomosis, I beg to point out that end-to-end suturing is time-consuming, and even in the most skillful hands leakage of intestinal contents between the sutures is frequent, as proved by the high death-rate from septic peritonitis. Lateral anastomosis by hand-suture is open to the same criticism. The mechanical aids, such as the vegetable, bone, and rawhide plates of Dawbarn, Senn, and Robinson, respectively, and Murphy's button, are open to many objections, and are considered unsurgical by some operators. The method I offer is applicable to any portion of the intestine which possesses a mesentery. I

have not had the opportunity to practice this method in its entirety on man, but in dogs it works perfectly. Theoretically it bears the stamp of the three ideal requisities, namely, (*a*) rapidity of execution, (*b*) safety of approximation, (*c*) ample anastomotic opening. Rapidity of execution is a desideratum of great value. Exposure of the abdominal contents, especially in the weak and non-resistant, has frequently brought about a fatal

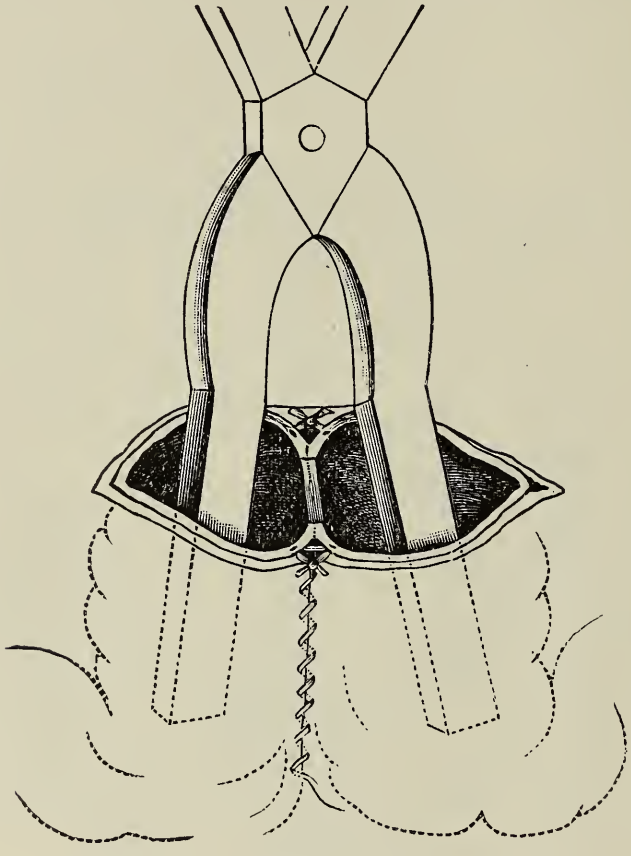


FIG. 3.

Intestinal anastomosis. Showing the septum to be divided in restoring the fecal current. Grant's clamp in position for the division. (In permanent colostomy this septum remains as a rigid and effective spur. Contrast this with Fig. 1, which shows the spur formed by suspending the gut over a supporting pin or rod.)

issue when the union between the intestinal ends has been perfect. Every one to-day recognizes the value of rapidity in intestinal work, and knows that each additional minute of exposure contributes to shock. Safety—by which I mean accuracy of approximation—is the essential feature of the operation. The faulty application of a suture, bringing about leakage of intestinal contents, produces a certain fatal result. The third

requisite, of ample anastomotic opening, has been one of the weightiest objections to the very ingenious Murphy button.

The method which I propose is as follows: After the usual preparation of the patient for laparotomy, and free purgation when possible, an incision of sufficient length is made down to the peritoneum. All hemorrhage being carefully arrested, the peritoneum is incised and a sterile pad introduced to protect the intestines while the parietal peritoneum is stitched to the skin with a continuous catgut suture. The lesion which has necessitated the operation (tumor, stricture, etc.) is now sought for, and, when found, is drawn through the incision until six inches of healthy gut on each side of the piece to be exsected is exposed. The two limbs of the loop, with the lesion as apex to the knuckle, are laid side by side, the convex borders in apposition, and a running stitch of fine silk, beginning at the points where exsection is desired, is carefully inserted, uniting the two pieces of intestine close to and parallel with the mesenteric border for a distance of six inches. (Fig. 2.) The sutured loop is then passed back into the abdomen until the point where the running suture begins (*i. e.*, the point where the intestine is to be exsected,) is on a level with the skin surface, and the loop stitched into the abdominal wound with a continuous suture of catgut. This leaves the lesion protruding. If waiting is permissible, twelve hours should elapse, and then under cocaine anesthesia the protruding intestine is snipped off with scissors level with the skin. Having established an artificial anus, we may now wait any length of time in order that the lymph thrown out may solidly unite the apposed walls of the sutured portions.

The next step is the re-establishment of the continuity of the intestine. With a finger inserted into the opening of each portion of intestine, to define the spur and guide the cutting instrument, the septum is divided with scissors along its median line for a distance of four inches, or, better still, a clamp such as H. H. Grant's, of Louisville, which crushes rather than cuts, may be used. (Fig. 3.) A moment's study of the accompanying illustrations will make the technic perfectly clear. It will not be necessary to take out a wedge-shaped section, as the passing of the feces will prevent reunion of the septum. The abdominal

wound may now be closed by any method which suits the surgeon. I prefer the method of Szymanowski* or Byrd. The technic of the latter is here appended. In the most expert surgical hands the integrity of the line of sutures approximating the two ends of severed intestine in an anastomosis is a matter of uncertainty, and the subject of grave anxiety to the surgeon until a movement of the patient's bowels demonstrates successful union. By the author's method this danger of leakage at the line of coaptation is entirely removed. Exsection of the lesion is performed *outside* the abdominal cavity and the anastomosis effected subsequently with little or no additional risk. In the hands of experienced operators the mortality of stitching the loop of gut into an abdominal wound and, after plastic exudation

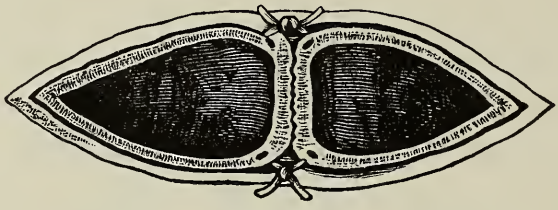


FIG. 4.

Showing application of the first two sutures to be applied when stitching the loop into the abdominal wound. They hold the upper margin of the spur level with the skin surface.

has sealed this line of stitches, clipping away the protruded portion, under cocaine anesthesia, would probably not exceed two in a hundred. Add to this, for completion of my operation, a simple division of the spur, which should be devoid of danger, or nearly so, and it would seem that the method offers great hope of being a life-saving procedure.

In inguinal colostomy the operation is to be considered a failure if any fecal matter passes the opening into the distal portion of intestine. The originators of the different methods now in use admit that in this respect the spur is incomplete. Mathews, of Louisville, Ky., who uses two hair-lip pins thrust through the mesentery, says: "The fecal current is not always diverted." Kelsey, of New York, speaking of colostomy in general, takes the inefficiency of the spur for granted, saying, "Relief of pain and tenesmus is sometimes only partial, because a portion of the

*"Wyeth's Surgery," second edition, page 702.

feces passes the opening." The use of any mechanical support, such as glass rods, pins, etc., to hold the loop of gut in the abdominal wound while adhesions are forming, is, like the mechanical contrivances for anastomosis, incompetent and unsurgical. The spur will sag below the level of the skin when the support is removed. Of the present advocated operations, the nearest approach to efficiency is Allingham's "mesenteric stitch," but Mathews, who is a great admirer of this method, admits that it occasionally fails to completely divert the current. According to Allingham, procidentia occurs in sixteen out of sixty cases, and to avoid this he has advised drawing the gut out of the wound until the mesentery is taut, stitching it, and subsequently, under ether narcosis, excising all the protruded portion with a specially devised clamp. He confesses that cutting away such a large mass of intestine adds to the gravity of the operation, and Treves criticises the procedure as unnecessary and severe.

Cripps draws the intestine out of the wound, passes it over his finger back into the abdomen until the mesentery is taut, and then stitches it. This plan is preferable to Allingham's, but it may be objected that the opening is placed too high up the gut. The nearer the opening is to the rectum, the more comfortable will be the patient. The fecal mass being more or less solid, the movements can be confined to one or two a day, with the aid of diet and astringent medicines; while, if the opening is high up the gut, there is the annoyance of a continuous excoriating and offensive fluid discharge.

The last and most formidable criticism of the present technic in inguinal colostomy, is the difficulty of re-establishing the fecal current, should this be desired. A laparotomy and intestinal anastomosis must be done with all the attendant dangers of handling the septic anal orifice in the peritoneal cavity. Depuytren's clamp is hardly to be considered. "Nearly all attempts to re-establish the anus at its natural site after colostomy have signally failed." (Mathews.) That such dangers attend the restoration of the intestinal continuity has probably done much to place the operation in the position of being applicable only to ineradicably obstructive lesions of the colon. No one would dare, in the face of the high mortality, to advocate or perform colostomy for acute lesions, such as inflammation, ulceration,

etc., which physiological rest might cure. The operation which I propose will obviate these three principal faults, viz., (1) Inefficient spur, (2) procidentia, and (3) mortality from restoring the continuity.

In performing colostomy an incision is made one and a half inches long, two inches inside of the spine of the ilium, crossing at a right angle a line drawn from the anterior superior spine to the umbilicus. A sterile pad is introduced to protect the intestines, and the parietal peritoneum is stitched to the skin. When a colon is identified, it is drawn through the abdominal wound until a loop *twelve inches* long is exposed. If the anus is to be permanent, the loop is acutely flexed upon itself and a running suture of silk is placed along the line midway between the mesenteric and convex border on both sides, beginning at the apex of the knuckle and extending for *six inches* down the two limbs of the flexure, thus approximating the two serous surfaces and *folding the mesentery in between the limbs to stiffen the spur.* The sutured loop is then dropped back until the point, as shown in Fig. 2, is level with the skin surface. A stitch is passed through the skin into this point, back through the skin and tied. (See Fig. 4.) This must be carefully and accurately inserted. The suture is repeated on the opposite side. The gut is now stitched in the abdominal wound with a running suture of catgut. Catgut as a material for suture in this operation is to be preferred to silk, as the latter is hard to find among the granulations when the time comes for removal, and by capillarity it infects the stitch-holes, giving rise to pain and sometimes abscess.

After an interval of forty-eight hours, if waiting is permissible, the protrusion is snipped off with a pair of scissors nearly level with the skin, cocaine anesthesia being required. We now have a spur so stiff and rigid that it can not be dragged below the skin level, and no feces, either solid or liquid, can pass into the lower portion. In a few days the plastic exudate around this fortified spur has so thickened that procidentia is prevented.

If the artificial anus is to be temporary and subsequent closure of the colostomy wound is desired, the line of sutures approximating the two limbs should be inserted *like those given for anastomosis,* which does not fold in the mesentery, and when ready for restoration, the spur is simply divided along its median

line for four inches, as directed for anastomoses. (Fig. 3.) When the abdominal wound is closed we have a perfect and ample anastomosis between the proximal and distal portions of the colon.

Byrd's method of closing the abdominal wound is as follows:†

"The skin on each side of the opening is caught up in a fold, in such a manner that the top of the folds meet easily over the opening of the bowel; an incision along the top of these folds, which is about three quarters of an inch from the opening in the bowel, is then made through the skin and superficial fascia, and extended so as to form an ellipse inclosing the opening. That portion of the skin next the opening is then dissected up from the outer side, leaving it attached at the inner side to the opening in the bowel; it is then inverted and turned into the bowel. This procedure brings the raw surfaces in apposition, and throws the skin into the bowel, so as to form a continuation of the mucous membrane. The skin on either side of this elliptical raw surface is now brought together by passing two stay sutures, with a shot and shield, back about an inch from the cut edges, and making traction. This brings the edges together and makes them rise from the abdomen like an inverted V. Where the skin meets at the apex of the V it is fastened with a catgut suture. The portion of the skin in the intestine is shaped like a V, and that outside has its apex immediately above the apex of the lower one. By this procedure fully an inch and a half of raw surface is brought in contact over the opening in the bowel, thus almost insuring sufficient adhesion, while the V raw surfaces of the skin that are inverted into the bowel act as a valve, and are held in apposition by the pressure of the contents of the bowel."

I have used this method of making the spur in one case, but as yet have not had the opportunity of attempting restoration of the gut.

L. M., Chicago, a jeweler, sent to me by Professor A. R. Robinson, was suffering from a recurrent tumor of the rectum which had been diagnosed as sarcoma. He had been operated on three times, with prompt recurrence each time. When I saw him the anal sphincters and rectum for a distance of three or four inches had been removed. The growth had recurred and involved the tissues around the outlet, as far up as the end of the severed gut.

†Kelsey's "Diseases of the Rectum and Anus."

Believing it to be sarcoma, and further attempt at local removal unadvisable, inguinal colostomy was proposed and consented to. On July 15, 1896, at the New York Polyclinic Medical School and Hospital, I did the inguinal colostomy and constructed the spur in the manner just detailed. Up to this date no procidentia has occurred, and absolutely no fecal matter has passed beyond the opening. Dr. Robinson has since removed the growth by medicinal means, in spite of the fact that the diagnosis was that of sarcoma. The patient, however, prefers to keep the artificial anus, as the anal sphincters have been removed.

The additional operation of closing the abdominal wound, advanced as an objection to the method, could scarcely be defended if mortality is lessened. In this regard it is highly probable that the free and ample anastomotic opening, secured by dividing the septum for four inches, would permit the artificial anus to close by granulation, and if division of the spur could be accomplished without general narcosis, a second operation would be unnecessary. Liability to ventral hernia is an objection anticipated, but it is a matter of minor import compared to the saving of life. It is probable that no perfection of the technic of colostomy will ever make it acceptable to either surgeon or patient as a permanent substitute for the natural outlet; but, if the dangers of closing it and restoring the continuity of the fecal current can be obviated, the operation will have a wide field of application in those acute lesions of the intestinal tract in which temporary physiological rest would prove curative.

PROLAPSE, PROCIDENTIA, AND INVAGINATION OF THE RECTUM.*

BY GEORGE RYERSON FOWLER, M. D.,
BROOKLYN, N. Y.

The indiscriminate employment of these terms has given rise to some confusion in the minds of practitioners and writers. The term "prolapse" should be restricted to protrusion of a portion of the circumference of the otherwise healthy mucous membrane of the bowel. The term "procidentia recti" should be applied only to those cases in which descent of the whole circum-

*An abstract of a paper read before the New York State Medical Society, January 27, 1897, in the discussion on Rectal Diseases.

ference of the rectum occurs. In invagination the upper portion of the rectum descends through the lower part, after which it may or may not make its appearance outside the anus, according to the degree of laxity of the connective tissue.

The chief predisposing cause is a relaxed condition of the connective tissue structures of the bowel. The simple eversion which is not infrequently observed in health, may, under circumstances of straining at stool, or other violent expulsive effort, convert this into a pathologic condition. With progressive relaxation of the connective tissue, protrusion of the entire thickness of the rectum occurs, and finally the peritoneal covering of the bowel also descends and protrudes through the anus. The weakening effect of loss of connective-tissue support to the muscular apparatus of the anal outlet adds a further factor in the etiology, both the sphincters and levator ani becoming involved in the pathologic process. Further, the degenerative changes present in the surrounding connective tissue may extend to the muscular tissue. Finally, an abnormally long meso-rectum, with replacement of the connective tissue attachments of the rectum to the sacrum with peritoneum, may serve as a predisposing cause.

The principal exciting causes in children are constipation, diarrheal and dysenteric diseases, polypi, and so-called seat worms. A certain amount of eversion may produce involuntary straining efforts, and in the presence of degenerative changes prolapse may follow. In adults vesical tenesmus incident to the presence of vesical calculus, stricture of the urethra, and enlarged prostate serve as exciting causes. Cases likewise occur in which none of these are present. As a result of degenerative changes in the connective tissue and muscular apparatus the final mechanism of the production of prolapse is incident to the normal effort at defecation.

The underlying pathologic changes in the pelvic fibrous and connective tissue, and muscular apparatus as well, are not well understood. Under normal anatomic conditions slight degenerative changes may serve to initiate the processes which result in the final production of these conditions. Final involvement of the sphincters may be a result of fatty degeneration due to neural or vascular disturbances, or follow as the legitimate result of pressure of the mass from above.

In simple prolapse the tumor is small in size, and the sulci radiate from the anal aperture. In procidentia the protrusion is much larger, and the sulci are transversely arranged. The protrusion at first occurs only after each act of defecation, and while the sphincters remain comparatively intact, is easily retained when reduced. Later on the condition occurs between the acts, and, with the occurrence of inflammatory edema, is not always completely reduced. Ulceration occurs as the result of friction as well as from trophic disturbances. Bleeding and a muco-purulent discharge occur.

These conditions occur most frequently at the two extremes of life. They are to be differentiated from protruded internal hemorrhoids and rectal polypi and colono-rectal intussusception in children. Among possible complications are to be mentioned circular sloughing, constituting in prolapse one of nature's attempts at cure. In cases in which the protruded portion of peritoneum retains its relations with the peritoneal cavity, this may be the seat of a hernia, and contain small intestine, which may become strangulated with the formation of an "anus preternaturalis in ano," or an ovary; exceptionally it may contain the bladder, or even other viscera. Spontaneous rupture of the prolapsed rectal tunic may occur.

The palliative treatment includes the administration of tonics, the use of cold water enemata, and moving the bowels in the recumbent position. Remediable exciting causes should be removed. Reduction may be effected by placing a piece of dry lint over the protrusion, or the apex of a paper cone, and reducing the tumor, lint and all. In children, strapping the buttocks together with a broad piece of adhesive plaster will prevent reprotrusion between the acts of defecation.

Van Buren's linear cauterization of the mucous membrane and Allingham's nitric acid application constitute comparatively conservative methods of permanent cure, and are successful in many cases in children, particularly if care in the after treatment is exercised. More radical measures comprise the application of a purse-string subcutaneous suture at the anal orifice (Platt); excision of elliptical portions of the rectal wall; this, combined with narrowing of the orifice (Robert's operation), the application of Gersung's method of torsion, designed origin-

ally to effect adventitious sphincter action following excision of the lower part of the rectum for carcinoma, Lange's operation of infolding of the posterior rectal wall after removal of the coccyx; elevation and fixation by (*a*) the extra-peritoneal methods of Verneuil and others, and (*b*) the intra-peritoneal route as exemplified in Berg's and McLeod's operations; and finally, the methods of amputation of Mikulicz, Treves, Esmarch, and Kleberg.

A CONTRIBUTION TO THE STUDY OF AMEBIC DYSENTERY.

BY DR. CHARLES E. LOCKWOOD,

NEW YORK, N. Y.

A paper with the above title was read at the annual meeting of the New York State Medical Society, held in Albany, January 26, 27, and 28, 1897.

Dr. Lockwood said: "We are realizing more and more every day that the study of the rôle played by the lower organisms in the production of diseased conditions is most important as looking toward the proper diagnosis and treatment of many diseases to which our flesh is heir, and it is with this conviction that I am led to contribute my experience in the diagnosis and treatment of amebic dysentery."

The writer first described the ameba as a genus of protozoa, belonging to the order amebæ, class rhizopodæ, the members of which consist of but slightly differentiated masses of protoplasm, characterized by a constant change in form (ameboid movement). Amebæ coli were discovered by Lösch in great numbers in the dejections and on the mucous membrane of the large intestine of a man affected with dysenteric symptoms. It is 20 to 35 m. in diameter, rounded or pear shaped, and possesses a few broad pseudopodia, a nucleus, and a few vacuoles.

The doctor then referred to the investigations of Drs. Wm. T. Councilman and Lafleur, at the Johns Hopkins Hospital, in Baltimore; also to reports of cases by Kartulis, Hlava, Masiutin, Pfeiffer, Osler, Musser, Stengel, Dock, Cohen, Illoway, and Edebohls.

He exhibited a drawing showing the ameba in a case which came under his observation. It seems probable that drinking-water is one, if not the chief, source of infection.

He gave the conclusions of Drs. Councilman and Lafleur, who said:

First, that amebic dysentery should be regarded as a distinct disease; second, that the ameba had been shown to be the causative agent from its constant presence in the stools and in the anatomical lesions, and from the inoculation experiments of Kartulis, and that the disease is characterized by variable onset, of which the special features are periods of intermission, alternating with exacerbations, a marked tendency to chronicity and anemia; third, that abscess of the liver and involvement of the lung are frequent complications; fourth, that the disease is widely distributed, and found in most parts of Europe and the United States, and in the tropics everywhere.

The case reported by the doctor was in a young man thirty-two years of age, who had been under the care of other physicians for eleven days and experienced no relief. An examination of the stools showed the ameba, and the following treatment was prescribed:

As a diet, one quart of peptonized milk and the whites of six eggs, with a little salt water daily. The use of rectal injections of the bisulphate of quinine, in the strength of 1 to 5,000, 1 to 3,000, 1 to 2,500, 1 to 1,500, in three to four pints of water, at the temperature of 100° Fahrenheit, three or four times a day, preceding their administration by the insertion of a suppository, containing one grain of opium, a half-hour before each rectal douche, and to give by the mouth two grains of quinine every three or four hours, and a capsule containing fifteen to thirty minims of castor oil, and two and a half grains of salol, six to eight times a day, for cleansing and antiseptic purposes, and one grain of opium every four hours.

The injections were given with a hard rubber funnel and rubber tubing, connecting with rubber rectal tube; hips were elevated, and injection given slowly. This treatment was given for five days, commencing with solution of quinine 1 to 5,000, and continuing that three times a day for two days, and then using the higher strengths on the third, fourth, and fifth days,

when microscopic examination showed that the amebæ were present in the general mass of the feces only in very small number, and that they were less active. No more injections were given, and three days afterward microscopic examination showed normal stools free from amebæ, and the patient was pronounced well.

Dr. Lockwood insisted on the importance of the differentiation of this form of dysentery from the other forms, and the importance of the microscopical examination of the feces in all cases of obstinate diarrhea marked by remissions, exacerbations, chronicity, and anemia, associated with discharge of mucus and blood, and in some cases no rise of temperature, and the marked efficiency of rectal douches of bisulphate of quinine in destroying the ameba, sufficing for a cure in this case in five days, and the necessity of an early diagnosis and treatment to prevent abscess of the liver.

THE PROPER METHOD OF TREATMENT OF INTERNAL HEMORRHOIDS.*

BY ROBERT T. MORRIS, M. D.,
NEW YORK, N. Y.

Dr. Morris read a paper with the above title. He presented in condensed, classified form the anatomical, physiological, and pathological points which should serve for guiding as to the proper operation. He said that we should not do the Whitehead operation or the so-called American operation, because it removed the special rectal sense apparatus, the pecten dentations and papillæ. If primary union was missed grave complications appeared from the contraction of the scar. The method of injection of the pile with carbolic acid or astringents was very dangerous because veins remained wide open to carry septic emboli to the liver or heart. Septic infection following sloughing in these cases was unmanageable by the surgeon. It was a favorite method with itinerant practitioners, because most of the patients recovered pretty easily, and they did not care much about the rest of the patients.

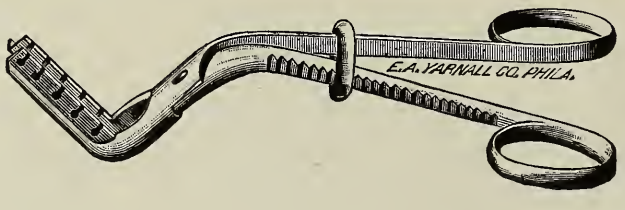
*An abstract of the paper read at the meeting of the New York State Medical Society, in the discussion on Rectal Diseases, January 27, 1897.

Crushing methods exposed the patient to the dangers of septic embolism and septic infiltration. The clamp and cautery method was successful in the hands of a few experts and avoided many dangers, but the wounds often healed very tardily. Simple dilatation of the sphincter muscles was a palliative procedure only. The two best methods involving the least danger were the method of ligation and excision of the pile tumors, or excision of piles and suture of the incisions. In selected cases the latter operation was the author's favorite.

THE SUTURE-CLAMP OPERATION FOR HEMORRHOIDS.*

BY LLEWELLYN ELIOT, M. D.,
WASHINGTON, D. C.

The operation described is the one originated by Dr. William Erwin, of Walter's Park, Pa. The clamp is shown in the accompanying cut.



It consists of two arms bent at a right-angle at the lower end; this bent portion, which is about one and a half inches long, is provided with a shoulder one fourth of an inch high, and perforated by five small openings; the shafts above the angle are pivoted and serrated to receive a ring which regulates compression and bleeding.

After the usual preparation of the patient and dilatation of the sphincter the hemorrhoid is seized by the forceps and well drawn down; the clamp is then applied as near the base of the hemorrhoid as possible, and the ring slipped along the serrations until there is sufficient amount of compression to control hemorrhage. With a needle threaded with silk or catgut the hem-

*Therapeutic Gazette, February, 1897.

orrhoid is pierced through the needle holes of the clamp. When the sutures are placed, the hemorrhoid is cut off with either knife or scissors, the sutures tied and the clamp removed. When the hemorrhoid is longer—that is to say, has a base broader than the clamp is long—the hemorrhoid must be removed in sections, one section being completed to the tying of the last stitch before the second section is attacked. The reason that the last stitch is left incomplete is that one may have a certain amount of control of the remaining part, and the placing of the clamp is more satisfactory.

The sutures are removed on the fifth or sixth day, when the wound is nearly healed. Should the stumps remain large, a few applications of a mildly astringent solution of alum or tannic acid will contract them and cause them to disappear.

BOECKEL, M. J.: RESECTION OF THE RECTUM. (*Le Progres Medical.*)

Boeckel sent a paper on the resection of the rectum per the "sacro-iliac" method in case of a neoplasm situated high up. He advised to attack first the sacral route and then the abdominal, and reports having performed this operation in the case of a Sister of Charity, who made a perfect recovery after the ablation of twenty-five centimeters of rectum. This method was proposed by Gauthier (of Lille) and carried out by Chalot and Gauthier. It seems, however, that the patient of M. Boeckel alone survived the operation.

M. Quinu dwelt upon the interest of this observation; upon the fact that the sacral, combined with the iliac passage, is certainly an excellent method.

Correspondence.

NEW YORK LETTER.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Metastatic Abscesses and Septic Bronchitis Secondary to Appendicitis. Dr. B. T. Curtis presented, October 12, 1896, a boy of nine years, who when first seen had a swelling on his foot. Under a wet dressing this somewhat subsided, but a few days later he returned with an abscess in the axilla. This was opened, and considerable discharge followed. The abscess lay in the belly of the biceps. Bone disease was excluded, and a diagnosis of metastatic abscess was made. His temperature continued above the normal, and two days later pain and a tumor in the appendiceal region was made out. This apparently explained the metastatic abscesses in the foot and arm. On opening the peritoneal cavity a large abscess was found encapsulated between the cecum and omentum. He was at this time suffering from a septic bronchitis. Convalescence was rapid.

Fecal Peritonitis; Streptococcus Antitoxin. Dr. Howard Lilienthal gave a history of and showed a young woman of twenty-six years, who, on March 26, 1896, came to him evidently suffering from appendicitis. She had been sick for two days with pain, fever, and chills. The abdomen was opened at once, and contained a large quantity of pus and fecal matter. Irrigation, with salt solution, through a stiff catheter. Believing the case to be hopeless, he suggested that she be given some of Giebier's streptococcus antitoxin. Next day temperature fell to 99.5° F., and pulse to 100. Ten days later tenderness on the left side demonstrated the presence of an abscess along the posterior pelvic wall which communicated with that on the right side. The sinus closed in three weeks, and the patient was sent home. Some time after she menstruated, and both wounds reopened with a purulent discharge. Irrigation from one side to the other is still kept up.

Small Wick for Drainage. Dr. R. T. Morris believed that gauze packing affords the best means of drainage, but that the opening should not be large, as it would weaken the abdominal wall. He preferred a small wick drain, and the use of aristol to shut off the abscess cavity.

Bringing the cecum to the surface and sewing to the abdominal margin had been successful in six cases, as a means of preventing hernia. The cecum can not be brought up in some cases. Phosphatic concretions in the bottom of sinuses prevent closure. This was probably the reason, in Dr. Lilienthal's case, that the sinuses did not close. He thought that dilute mineral acids might be of service in these cases.

Dr. Kammer practiced free drainage with gauze when there was any danger of general infection. When the case seems on the verge of such a condition it is best to leave the whole wound open, and close by secondary suture twenty-four to thirty-six hours later.

Dr. Tuttle asked what proof was there in Dr. Curtis' case that the appendicitis was not metastatic instead of *vice versa.*

Dr. Curtis replied that the conditions around the appendix showed dense adhesions and an old walled-in abscess, whereas the condition in the heel was but ten days old. Still there was no previous history of appendiceal attacks. He preferred wide packing and dressings in the cases where there was an abscess with more or less diffuse peritonitis.

Dr. Lilienthal had had two cases where the cecum had been allowed to remain in the wound as a plug, and in both, later, hernia developed.

Dr. Morris said that in closing the abdominal wound he left an opening just large enough for the insertion of a wick-drain down alongside the cecum. He considered that with his plan, if the cecum became attached to the wound, there was little danger of hernia following.

Irreducible Right Inguinal Hernia Complicated by an Inflamed Vermiform Appendix in the Sac. Dr. J. B. Walker, November 9, 1896, presented a young man, seventeen, who had been ruptured in infancy. He had worn a truss most of the time. During the past two years he had experienced attacks of pain. One year ago the speaker had applied a truss, which had not sup-

ported the hernia well, so an operation had been done, *a la* Bassini, in October. Incision disclosed a congenital hernia, with a large mass of omentum. This seemed to inclose a hard mass which proved to be the inflamed appendix, containing about one drachm of sero-purulent fluid above this stricture. The appendix was removed, the stump treated by Dawbarn's method of inversion and suture.

Dr. Tuttle, having witnessed the operation, was struck by the thinness of the sac wall, and asked if this was usually the case when there had been an inflammatory process.

Dr. Walker replied that the sac was very thin, except in that portion adherent to the appendix.

Dr. Coley had operated upon seven cases in which the appendix was in the sac. In one the appendix was gangrenous, in the other very adherent, and he had removed both. He deemed it wise to return the organ in non-adherent, uninflamed cases.

Cecum and Appendix Found on Left Side. The chairman, Dr. Curtis, had operated on a case of left-sided hernia which consisted of the cecum and appendix. He thought that Dr. Walker's case emphasized the importance of a thorough examination of the omental mass before ligation.

Dr. J. F. Erdman, at a recent autopsy, had found a mesocolon and cecum six inches long lying over in the left iliac fossa.

Dr. Coley had operated upon a left-side hernia which contained a long appendix.

Dr. Loyd had recently found an undescended testicle, the caput coli, and a six-inch appendix in the sac on the right side.

Strangulated Femoral Hernia Containing Caput-Coli, Appendix, and Intestine. Dr. Walker, January 11, 1897, presented a woman of sixty-seven years, upon whom he had operated for femoral hernia, which had been strangulated one hundred and five hours. The hernia had first appeared thirty years ago. She had worn a truss. During that time it had become irreducible upon several occasions. October 23, 1896, there was constipation, pain, and the mass could not be reduced by any means. On the second day she began to vomit; this became fecal in character on the fourth day. Under a two-per-cent. cocaine anesthesia the sac was opened, and was found to contain foul-smelling, reddish-brown fluid, the head of the cecum, the appendix, and six inches

of intestine. The latter presented a mahogany color, and was lustreless. Having relieved the condition by nicking the ring, the whole mass was enveloped in hot, dry towels. Next day the vomiting ceased. Seventy-six hours later the whole mass was reduced, and the opening packed with a moist dressing. The discharge was quite profuse, and necessitated change of dressing every four hours. She made a good recovery.

Recto-urethral Fistula Cured in One Operation. Dr. James P. Tuttle (February 8th) presented two cases of recto-urethral fistula, both of which had been cured by a new operative procedure. One was a patient in whom a large perineal abscess had been operated on, and had left an opening between the rectum and urethra into which the finger could be introduced. It was impossible to bring the edges of the urethra together. The mucous membrane of the rectum was dissected away from the fistula and the latter was extruded by an incision in the urethra forward so as to convert it into practically a perineal section, a new floor for the urethra at the fistulous portion from the soft tissues on either side, thus closing this canal as far as the margins of the anus. The mucous membrane of the rectum was then dragged down and sutured together at a slightly lower level than that from which it had been dissected. The external sphincter, which had been cut in the perineal incision, was left divided. The perineal wound was left open and packed with iodoform gauze for twenty-four hours. A catheter was kept in the bladder, passing through the urethra for two weeks, as it did not seem to give the patient any inconvenience. The after-history of the case was simply that of a perineal section. No urine escaped into the rectum after the operation, and the perineal wound closed in about six weeks. The patient is entirely well.

The second case was one of long standing. He had fibrous stricture of the rectum with ulceration, and the recto-urethral fistula traversed a large mass of cicatrical tissue. It was a small opening, however, and entered the left side of the urethra. The patient suffered greatly from the urine escaping into his rectum, and had been treated by cauterization and operations, but without avail. On account of the ulceration Dr. Tuttle deemed it advisable to do a preliminary colostomy to divert the fecal cur-

rent, and exhibited a method of doing this so that the closure will be simple and not necessitate opening the peritoneal cavity the second time. In the case shown the artificial anus had been closed two weeks, and the abdominal wound had cicatrized over, though no sutures had been used to draw the edges together. The operation for the fistula in this case was done three weeks after the colostomy and was practically the same as in the first case, with the addition of dissecting out the mass of cicatricial tissue between the rectum and urethra.

A New Direct Electric Head-light. Dr. Tuttle also exhibited an ordinary electric globe inclosed in a cone-shaped metal reflector, which was adjusted to his head by a cap, and gave brilliant illumination, without a mirror, by direct light.

Very large Inguinal Hernia. Dr. George E. Brewer presented a man who had been cured of the largest inguinal hernia he had ever seen treated by Bassini's method. The tumor had extended half way to the knees, and contained eleven feet of intestines, and a large part of the omentum. There was considerable bleeding from the seven inches of gut adherent to the sac, which was controlled by applying hot towels and salt solution. The operation had been done sixteen months ago, and the man has since been working at his usual occupation as a laborer. The cicatrix is firm and cure complete.

Wound Infection. The paper of the evening was the joint work of Drs. George E. Brewer and Philip H. Hiss, on "*Operative Surgery at the City (Charity) Hospital, with a completed Report on the Study of Wound Infection.*" The original paper (a preliminary report) had been presented about a year ago to the Harvard Medical Society, and detailed the efforts of Dr. Brewer to improve the operative technique of the hospital. The present report consisted of a review of one hundred and nine operative cases in Dr. Brewer's service in 1896. The study of the sources of wound infection had been carefully carried out, and every effort made toward their elimination from the operating-room. One of the first steps was the adoption of the following operating-room rules:

Preparation of Patient. When possible, a hot bath shall be given the day before the operation, followed by shaving and scrubbing the part for two minutes—soap poultice over night. The following morning, rescrubbing for ten minutes, after which a wet bichloride gauze dressing shall be applied (1–1,000);

this to be done only by the head nurse in the ward, after thorough sterilization of the hands.

On the operating-table the dressings shall be removed and the part washed by the House Surgeon for one minute with soap and sterilized water, a pledget of sterilized cotton being used instead of a brush; then douched with ether and a sterilized salt solution.

Sterilized dry towels to be used around wound area.

The operator, his assistants, and the operating-room nurse shall wear freshly sterilized gowns. Gauze caps shall be worn in every aseptic case by those in immediate contact with the wound area.

The *hands* of the operator, his assistants, and the operating-room nurse shall be prepared in the following manner:

After cleaning the nails with soap, water, and a sterilized nail-cleaner, the hands must be scrubbed for *five minutes*, with frequent changes of hot water, a sterilized brush being used; then scrubbed for one minute in absolute alcohol; then immersed for three minutes in a 1–1,000 solution of bichloride of mercury.

Or, after scrubbing with soap and hot water for five minutes, immersion in a saturated solution of permanganate of potassium for at least one minute, in a saturated solution of oxalic acid until the stain of the permanganate is removed, and finally in a 1–1,000 bichloride solution for three minutes.

The ligature and suture material shall be removed from the bottles and handled *only* by the Senior Assistant Surgeon; dressings and sponges only by the operating-room nurse.

The *head nurse* of the ward shall superintend the moving of the patient, the adjustment of the blankets and other unsterilized coverings, assist the etherizer, and be prepared when necessary to assist or take the place of the operating-room nurse.

No departure from these rules will be allowed without the permission of the House Surgeon.

During the past year new operating-rooms have been constructed and equipped with all of the best modern appliances. Careful bacteriological examinations have shown that the system of sterilizing dressings, silk, catgut, etc., is perfect.

The various methods of hand disinfection were thoroughly tested and found to be imperfect. The one finally adopted was that recommended by Fürbinger, as bacteriological examinations demonstrated that this plan gave most often the best results.

To avoid possible hand infection, rubber gloves, previously sterilized by boiling, are worn by all assistants in every clean case.

For protection of instruments, ligatures, suture material, etc., from infection by the air (which was found to be badly contaminated) muslin tents, supported on wire frames, were employed to cover all instrument trays and wash bowls in use during the operation. Only one serious case of wound infection occurred during the year, and this was a symptomless and afebrile stitch infection.

The class of patients admitted to this hospital is undoubtedly

the worst to be found in this country, as over eighty per cent. are victims of syphilis, tuberculosis, and chronic alcoholism.

In the discussion which followed the reading of the above paper Dr. Dawbarn said he did not believe there is much danger of wound infection through the air.

Dr. Wiggin said that the work of the staff at the City Hospital was rendered more onerous, as the house staff rotated every six weeks.

Dr. Coley did not believe that the patients' general condition has much to do with the development of sepsis in wounds. He has secured ninety-six per cent. primary union in hernia cases at the Hospital for Ruptured and Crippled.

Dr. Gallant called attention to the recent address of Lord Lister, in which he announced that he has discarded his belief in infection of wounds through the air, and now believes that the chief sources of danger are the hands and dressings. Dr. Gallant, in his early hospital training, observed the various antiseptic technique of a large number of surgeons, which varied in the hands of each, and that primary union, absence of complications, and most rapid convalescence resulted when antiseptics were entirely discarded, and strict attention paid to the use of green soap, scrub-brush, and pure alcohol for cleansing the hands, and in the preparation of the field of operation. He employs but one assistant, who alone handles the instruments, ligatures, and dressings, and must also wash the sponge (if possible limiting himself to one sponge). Wound suppuration, he believes, does not depend so much upon the exact number of bacteria present, but upon the fact that the constituents of the blood which exudes between the edges of the wound brings about mechanical separation, and forms a pabulum for the growth of the bacteria. If the dressing is of such a sponge-like (absorbent) nature as to at once soak up this secretion no suppuration will take place, and primary union will in a few hours be secured. By using Prof. Van Arsdale's dressing of balsam peru and castor oil, one in sixteen, he has avoided wound suppuration, even when the operation has been performed in very dirty tenement houses.

Dr. Sands called attention to the fact that Fürbinger's method really consisted of scrubbing. With each step it is *scrub, scrub, scrub.*

NEW YORK SURGICAL SOCIETY.

Papillomatous Stricture, Small Intestine. Dr. Abbe (February 24th) presented a man of thirty-six years, from whom he had removed fifteen inches of small intestine, which, upon microscopic examination, proved to be of a papillomatous nature, chiefly round-cell infiltration of the mucous membrane. On opening the abdomen a mass lying to the right of the umbilicus the size of a large fist was found, and was made up of enlarged mesenteric glands overlying the diseased intestine.

The specimen exhibited eight distinct strictures, systematically narrowing the lumen of the gut down to an opening less than a quarter of an inch in diameter at the point of greatest constriction, the others being somewhat larger, up to three quarters of an inch. The patient has suffered from obstipation for four years. Dr. Abbe was unable to remove all the hypertrophical tissue, but since operation, nearly a year ago, it had all melted away. The man's health has been good ever since.

Sloughing Caused by Murphy Button. Intestinal anastomosis was accomplished by the use of a small Murphy button. A part of the gut at the point of union sloughed, a fecal fistula formed, through which the button was removed. The button fitted loosely.

Dr. Abbe, in the discussion, said that he would not use a Murphy button in a similar case, and believes a lateral anastomosis would be more secure. There had been no history of typhoid fever, but the patient dated his trouble from an attack of *la grippe* four years ago. The fistula had closed six months ago.

Dr. McBurney thought that there would be narrowing of the gut later. The two serous surfaces of an intestine will not unite if peritonitis be present, and when this exists any of the mechanical aids, such as Murphy's button, or Senn's plates, or even end-to-end suture, is almost sure to fail. Bodine's method would obviate this danger. In strangulated hernia, when the loop is gangrenous and has to be exsected, peritonitis is almost sure to exist locally, and as the patient is usually in a precarious condition, speed becomes vital to success. In these cases the method will find its most valuable application. The mortality, in patients of fair resistance, of making an incision into the cavity, drawing out a loop of gut and stitching it in the wound, such as is done in inguinal colostomy, should not exceed two per

cent., and as it only requires a subsequent division of the septum without anesthesia to complete Bodine's operation, it would seem to be a life-saving measure. The procedure, it is claimed, possesses the three ideal requisites—rapidity of execution, safety of approximation, and ample anastomotic opening.

A. ERNEST GALLANT, M. D.

THE STOLL TUBE.

EDITORS OF MATHEWS' QUARTERLY JOURNAL OF RECTAL AND GASTRO-INTESTINAL DISEASES.

DEAR SIRS: My object in writing to your valuable journal is to call the attention of the profession to the "Stoll Tube" now used exclusively in my own practice in all cases where such appliances are required. I have now, I think, tried every form of water bag, and have relinquished all of them for this. As an ice tube, ice bag, hot or cold water bag, it is in my opinion one of the most valuable additions to a physician's outfit that has been made for many years.

For the reduction of fevers, such as typhoid, it has no equal. It is never uncomfortable to the patient when in use, but on the contrary it always gives prompt and a restful sense of relief. In continuous fevers it obviates the constant sponging otherwise required, and thus relieves the nurse of much labor, or prevents forgetfulness and neglect by an overtired nurse.

I have found it of great value in rectal and intestinal diseases, peritonitis and appendicitis, painful menstruation, and that awful backache and headache of which there are complaints in every household.

In meningeal inflammation, pyrexia, it has its indispensable uses; in the latter disease the fall of temperature is almost immediate. It can be used on the forehead or neck or base of the brain, and is thus a superior water or ice pillow.

For crushed ice, hot or cold water or flaxseed, or other applications requiring the medicine to be in contact with skin, it is invaluable. It is simple in its construction, has no delicate parts liable to much repairs, and yet repairable in case of puncture or other accident as easy as a bicycle tire.

LOUISVILLE, KY. S. BRZOZOWSKI, M. D.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"Alis Volat Propriis."

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JOSEPH M. MATHEWS, M. D., AND HENRY E. TULEY, M. D., EDITORS.

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Editors Mathews' Quarterly Journal, Box 434, Louisville, Ky.

SHALL THE LAW DETERMINE WHO SHALL MARRY?

Any thing said concerning the marriage relation must be said with great delicacy, because of the sacredness of the subject. The man who dares assail the position that any thing but sentiment should obtain in the marriage contract is sure to bring down anathemas upon his head. The puritanical faith that yet clings to us leads in the channel that marriages are prearranged in Heaven, and simply consummated on earth. The church, too, uplifts its holy hands in horror, if any other phase is put upon the marital relation except a religious one. What a blow to love's young dream, if the law should dare dictate in this matter of whom we should or should not marry. Fond parents would cry, "for shame!" when at the same moment they were planning "a most suitable match" for their daughter where estates of great value, or mayhap a Duke or a Prince, was the consideration. However, in this day of reason as well as sentiment there is much to be said in favor of the affirmative of the question, "Shall the law determine who shall marry?" If the unprejudiced man or woman could "go the rounds" with the family physician for a day, or could sit for a while in the specialist's office, there would be much proof afforded which would at least put them to thinking. What a tale could the medical profession unfold if it would tell of the thousands of unhappy homes and wrecked lives brought about by marriages which should never have taken place from a physical or medical standpoint! The

parent often witnesses the decline and early death of his newly married daughter, but fails to recognize that her death results from disease in the son-in-law ante-dating the conjugal relation. If he is a *son-in-law*, indeed, why not have had the *law* officiate in the part at least of preventing so terrible a catastrophy? A cry is sometimes raised against the gynecologist for his oft performed abdominal operations; but it is well known to the medical profession that fifteen per cent. of all the diseases of women, *excluding* prostitutes, are caused by gonorrhea and its sequelæ. What harm then would accrue if the *law* should say that a man should be examined *first*, and given a certificate of health *after*. No honorable gentleman would object to this, for surely he would not intentionally bring down with disease to death his fair young bride. The law could be so far reticent as to "keep to itself" the nature of the ailment, and be content with the issuing of *a certificate of health*. At a Woman's Conference recently held in Paris the following resolution was adopted: "All families must secure certificates of health from intended sons-in-law in order to guard the daughters of the republic from the risk of contagious or hereditary maladies in the aspiring fathers of a later generation." Bravo! for these good and sensible French women, and may their American cousins take the hint and do likewise. The medical profession will stand ready and pledged to give all information—however startling—that may be necessary. Outside the subject of social purity and marriage, there is another phase to be considered when it shall be decided that the *law* shall decide who shall marry. Reference is made to tuberculosis. When it is conceded that this monster disease is contagious, is it not wonderful that so little attention is given to its prevention. "Disease may come and disease may go, but marriages go on forever." Every day is witnessed the marriage of persons afflicted with tubercular trouble, and the oft-told tale is repeated: the husband goes on from bad to worse until he succumbs to the disease; the red cheeks of the once healthy young wife begin to fade, the cough to develop, the plump form to rapidly emaciate, and she at last fol-

lows in the selfsame path of the husband. Children are left with that very susceptible lung soil, and they too drop off one by one, or go through life hawking, coughing, and spitting, to the discomfiture of themselves and every one else. The intervention of the *law* could and should prevent this, and no false sentiment should be raised against it. If such a law can not be given or enforced, let the people see to it that social purity shall prevail, and freedom from such risks be demanded. Let a certificate of health, clean and unsoiled, be presented before the marriage vow is given.

THE PROPOSED GASTRO-ENTEROLOGICAL SOCIETY.

The object of this society, as would be inferred from the name, is to bring together at stated intervals all the members of the profession who are specially interested in the study of digestive diseases, whether they limit their practice to that field or not. The promoters of it are Dr. Chas. D. Aaron, of Detroit, Mich., Dr. J. P. Bachman, of Fort Wayne, Ind., and Dr. A. L. Benedict, of Buffalo, N. Y., all of whom have been identified with the effort to gain a more general recognition of diseases of the digestive system as a field for special study and practice.

Those of the profession who have followed the articles that have appeared in the QUARTERLY from time to time on the subjects pertaining to digestion and its disorders have seen how wide the field is for original work and study, and will be glad that such a society is to be formed, for that means more work because of the extra incentive, and more literature bearing on these subjects.

It has been suggested to have the society formed as a Section of the American Medical Association at the next meeting in Philadelphia in June, but to this there have been objections raised, and we think not without reason.

Two years ago, at a meeting of the American Medical Association, it was suggested that there be organized a section in which the work was to be limited to a study of rectal diseases,

but nothing definite was ever done about it, and we would suggest that the promoters of the two societies join hands and include both the gastro-intestinal tract and the rectum in the field of work. Those interested are asked to communicate with either of those named above. The date for the first meeting of the society will be announced shortly.

KENTUCKY STATE MEDICAL SOCIETY.

The forty-second annual meeting of the Kentucky State Medical Society will be held in Owensboro, May 5th, 6th, 7th, 1897. Dr. C. H. Todd is the Chairman of the Committee of Arrangements, and the Committee on Topics has just reported the subjects for discussion as follows: The Fevers of Kentucky; Stone in the Bladder and Kidneys; Acute and Chronic Suppuration of the Middle Ear.

The essayists chosen are, Dr. A. D. Price, Harrodsburg, to read a paper on Intermittent Fever; Doctor Smock, of Oakland, on Cerebro-Spinal Fever; Dr. T. B. Greenley, of West Point, on The Natural History of Typhoid Fever; Dr. John G. Cecil, of Louisville, The Management of Typhoid Fever; Dr. Henry E. Tuley, of Louisville, The Serum Diagnosis of Typhoid Fever; Dr. E. Kelly, of Lebanon, Nephritic Colic; Dr. David Barrow, of Lexington, on Stone in the Kidney; Drs. H. H. Grant and W. L. Rodman, of Louisville, on Stone in the Bladder; Dr. T. C. Evans, of Louisville, on Acute Inflammation of the Middle Ear; Dr. J. A. Stucky, of Lexington, on Chronic Inflammation of the Middle Ear; Dr. J. M. Ray, of Louisville, on Complications in Inflammation of the Middle Ear.

The date of meeting has been changed so as not to interfere with the delegates attending the meeting of the American Medical Association in June; the Committee of Arrangements has made ample preparation for the entertainment of the visitors, and there is every indication that the meeting will be a success in every way.

With Our Exchanges.

DISEASES OF THE RECTUM.

VAUX, F. L.: THE BETTER OPERATION FOR HEMORRHOIDS; AN ANALYSIS OF FIVE HUNDRED CASES IN THE SURGICAL SERVICE OF MOUNT SINAI HOSPITAL. (*The Canadion Practitioner.*)

The author states that during the last eight years there have been seven hundred operations performed for hemorrhoids, of which five hundred were performed by the clamp and cautery, about one hundred and twenty-five by ligature, and some seventy-five by the Whitehead operation. The clamp and cautery operation is believed by the author to be the best, quickest, and safest. The reason this operation is performed most frequently at the hospital is as above stated, and because this form of operation is a radical cure.

As to the cause of the trouble in most of the patients admitted to the hospital is mentioned as the chief, a sedentary life, as seen in the tailor, constipation, straining at stool, and imperfect cleansing or not at all of the anus, and when any detergent is used it is coarse and of itself causes an irritation.

The external pile is most frequently met with in a condition of acute inflammation.

The following is the operative procedure as practiced by the hospital: Bath on admission, ice bag if hemorrhoids are strangulated, or a wet Thiersch solution if only burning and smarting are present. Licorice powder and high enema are resorted to for cleansing the bowel preparatory to operation, followed by a low enema just before. Shaving of the perineum and thorough scrubbing after anesthetization and dilatation of the sphincter. A good size sponge is wrung out of bichloride solution and introduced high into the rectum with a string attached; traction is made on this sufficient to cause protrusion of any internal hemorrhoids.

The technique of the operation may be summarized:

1. Apply the clamp in the long axis of the hemorrhoid so that the scar may be a radiating one, and thus avoid any chance of cicatricial stenosis.

2. Dip the distal end of the clamp well down, so as to include the mucous membrane of the hemorrhoid in its entire length, though only clamping off about one-third of its substance. Be sure that no skin is included, otherwise the subsequent edema will be very great and time of recovery lengthened.

3. Sear the hemorrhoid slowly from above downward, layer by layer, the cautery being only at a dull red heat. By observing these precautions any subsequent hemorrhage is avoided.

4. Insert a tampon cannula as described below, which must not be removed until expelled by the first stool.

When the anesthesia wears off the pain will be intense, and opiates must be given. The Mt. Sinai formula is tr. opii deod., *m.* xv, every eight hours. At 5 A. M. on the morning of the third day a half ounce mag. sulph. is given, and at 7 A. M. an oil enema is administered through the tampon cannula. This is important, as it saves much pain when the tampon is expelled. The enemas being expelled bring the cannula with them, and the first stool is comparatively painless. On each successive morning a half ounce mag. sulph. is given, and on the fifth day the edema will have disappeared in great part, and by the eighth day patient is ready to go. No dressing save a piece of iodoform gauze and a T binder is used. In a ligature operation the bowels are moved on the fourth day, and in a Whitehead on the fifth.

The tampon cannula mentioned above is made by taking a piece of half-inch rubber tubing, sterilizing it, and wrapping around it several layers of iodoform gauze. It is then anointed with sterilized vaseline, and after the operation is inserted in the rectum. The tampon cannula serves a double purpose. It allows the escape of secretions and flatus, so that all danger of retained hemorrhage is avoided, and also allows the primary enemas to be given without much pain.

In conclusion let us review the advantages of the clamp and cautery: It is antiseptic; not only can the clamp be readily sterilized, but the cautery itself is the most powerful germicide. There are no sloughs to separate as in the ligature operation. No ligatures or sutures to offer any chance for infection. It is a radical cure. The operation is a rapid one. The time of convalescence can be definitely fixed—eighth day. The operation, which was formerly but little employed, is now in high favor in

the New York hospitals. The record of hemorrhage, pyemia, or death is almost negative. It has been customary in some institutions to speak of the clamp and cautery operation as a barbarous and antiquated one. This is not right. The operation as above described offers a better method than that commonly in vogue to the surgeon, and a more satisfactory one to the patient. In the five hundred cases operated upon in Mt. Sinai by the above method there has not been a single death. One case of pyemia from which the patient recovered is recorded, and a few slight hemorrhages. Nor, so far as can be ascertained, have there been recurrences. Can any statistics be more convincing?

Wiggin, Frederick Holme, New York City: Notes on the Treatment of Fecal Fistula. (*Medical Record.*)

The chief cause of the occurrence of fecal fistula was stated to be the delay in resorting to operative measures to which patients suffering from typhlo-enteritis, or strangulated hernia, were frequently subjected while their ailment was carefully diagnosticated. The view recently advanced by a writer on the subject under consideration, that the best treatment for this condition consisted in its prevention, was concurred in. But, in the case in which this mishap had occurred, it was pointed out that if the opening was of small size, was located near or below the ileo-cecal valve and no obstruction to the fecal current existed, operative measures might be deferred, as in most instances the opening would close in a short time spontaneously. On the other hand, if the bowel opening was of large size, was situated laterally, or some distance above the ileo-cecal valve, and was accompanied by the escape of a large proportion of the contents of the bowel, operative procedure for the closure of the opening should be speedily undertaken.

The histories of three cases successfully treated by surgical measures were cited. In two instances the patients were inmates of the Hartford (Connecticut) Hospital, and were operated upon by Dr. Wiggin, by reason of an invitation which was extended to him by the medical board of that institution, after several previous unsuccessful efforts to close the bowel openings had been made. The occurrence of the fistulous opening was due in the first case to failure, and in the second case, to delay in resorting to surgical treatment of typhlo-enteritis, from which disease

both patients originally suffered. In the third case the bowel opening was caused either by the pressure of the gauze used to drain the abscess cavity, or by an ulcerative process which originated from within the gut. In the first case, as the opening in the bowel was of large size, irregular in shape, and the gut was thickened and friable, the diseased portion of bowel containing the opening, about four inches in length, was excised, and the divided ends joined by the suture method of Maunsell. In the second and third cases, the bowel openings were situated in the head of the colon, and were in both instances closed by means of several rows of sutures, after which the omentum was drawn over the former site of the fistula and retained in position by sutures.

In describing the technique employed the writer laid much stress upon the following points, viz., the thorough disinfection of the parts, including the interior of the bowel, with hydrozone, the closing of the intestinal opening, when possible, before the breaking up of the peritoneal adhesions, and the opening of the general cavity, the removal of any existing obstruction to the fecal current, the disinfection of the bowel surface with a solution of hydrozone before and after the placing of the sutures, the control of oozing from the cicatricial tissue by the same means and the closure by a single row of silkworm gut sutures without drainage of the abdominal wound after the washing of the peritoneal cavity with saline solution, some of which is allowed to remain. In concluding, the writer stated that since September, 1893, when he had proved the value of hydrogen dioxide as an effective antiseptic, which in proper solution did not unduly irritate the peritoneum, when followed by a six-tenths per-cent saline solution, he had had little reason to fear the danger of causing septic peritonitis from the accidental escape of pus or fecal matter while operating; and that when this complication had occurred it had been invariably successfully met by the use of hydrogen dioxide in the manner described in the paper. He advised the excision of the diseased portion of the gut in those instances where it had become much thickened and friable, and expressed the belief that with a clearer understanding of the objects to be attained by operation—that is, the restoration of the integrity of the intestinal canal, as well as the closure of the opening in the bowel—future operations for the cure of fecal fistula would more frequently result successfully.

The paper was discussed at some length by Dr. H. O. Marcy, of Boston, and Dr. Joseph D. Bryant, of New York County, who commended it, and in the main they indorsed the writer's views.

GASTRO-INTESTINAL DISEASE.

CHANCELLOR, EUSTATHIUS, ST. LOUIS, MO.: TWO YEARS' CLINICAL EXPERIENCE WITH THE GOLD SOLUTIONS.

These products being the most powerful alteratives at command, and so little understood from a physiological standpoint, it may be of interest to classify in a brief and concise manner some clinical experiences covering some two years of experimentation.

Materia medica and therapeutics are well worthy the constant attention of medical practitioners, but unfortunately do not receive the notice they are justly entitled to. Time, however, will demonstrate that their place in medicine deserves far more prominence than that now given them. Two years ago we knew very little of the physiological effects of arsenauro and mercauro, but to-day we are in a position to emphatically say that they are the most powerful therapeutic agents at command, not only for their pronounced power to incease the percentage of hemoglobin in the blood, but also the number of red blood corpuscles. The surgeon says he uses no medicine, but how quickly he changes his mind when he gets a case of that dreaded disease, lymphadenoma or Billroth's disease, when he finds his knife absolutely useless, and for his patient's sake must resort to treatment by arsenic. Not knowing what preparation to choose, naturally he turns to one known as well to the laity as to himself, that of Fowler's solution, which contains an amount of spir. lavender comp., which produces excruciating pain when injected into the tissues, and frequently stomachic trouble when given by the mouth, to such extent that it has to be abandoned temporarily at least.

If he had looked into and considered the probable effect of arsenauro, 12 times weaker in arsenic than Fowler's solution, containing no free (and therefore no irritating) arsenious acid, yet producing a physiological effect sooner than Fowler's solution (arsenauro can be used hypodermically as well as by the mouth), how much better and sooner would his patient be cured.

Its effect upon the tissues is far better, as it contains with it bromide of gold.

I herewith enumerate some of the special indications for arsenauro. It must be remembered that the power of arsenauro in its relation to physiological action and therapy is no different or very little when given either by the stomach or injected under the skin. A quick effect would naturally be achieved by the hypodermic medication. This would apply to tumors of the cervical region (be they tubercular or other infiltration of the glands). Such neuroses as chorea, epilepsy, neuralgia, have been marvelously cured by the use of arsenauro. Of course when given hypodermically the object sought is not simply to escape gastric irritation, for in many hundred cases not a stomachic disturbance has been reported. It is intended hypodermically to produce some local change in the nerves of the part which was the seat of disorder, as well as to bring about some more genaral change in the system. As to the dosage in any case requiring arsenauro or mercauro, the amount to be given at a time depends upon the physiological tolerance in each individual case. Some persons require only (6) six drops three times daily by the mouth for three months, others taking thirty drops three times a day for the same period of time, before permanent results are produced.

I wish to emphasize the fact that of all the cases of disease requiring these solutions may be mentioned nervous affections, disorders of nutrition, glandular enlargements and tumors having the aspect of cancer or some form of malignant growth. *In certain stomachal troubles, such as chronic catarrh, atrophy of the stomach glands, chronic ulcers and ulcers of the duodenum and other parts of the intestines,* arsenauro greatly benefits and frequently cures. If the stomach proves irritable (and this is rare), and irritability increases with the administration of the products, the subcutaneous injection becomes a precious resource, those places about the body being selected where the connective tissue is most abundant and loose. From five to seven drops can be injected three or four times daily for a week, and then administered by the mouth, for tolerance is soon established by the hypodermic use.

The liver, spleen, and suprarenal bodies and lymphatics, coming more immediately in relation with the semi-lunar ganglion and the solar plexus, are the organs more immediately concerned.

Not only pernicious anemia, but morbid states closely allied have been cured in the hands of Stucky, of Louisville, Lydston, of Chicago, Dumesnil, of St. Louis, Wight, of Brooklyn, Soniat, of New Orleans, and Wile, of Connecticut. Cases of this kind associated with such grave conditions as glandular swellings and sarcomata have been treated successfully with these products. The extreme anemia of leucocythemia and splenic leukemia are other indications for their administration. Enlarged glands from external causes, as the increase in size due to malarial toxemia, the enlarged spleen and liver, are quickly cured by arsenauro. It has exceptional powers in the treatment of diseases of the skin.

Two bodies can not occupy the same space at the same time. One must displace the other of necessity, and hence, when an impression from arsenauro or mercauro begins to develop, the morbid action must and does yield in a corresponding degree. This is the principle which underlies this treatment in diseases of the skin.

In gastric cancer and ulcer, arsenauro given in small doses, say three drops in water, four times a day, relieves the pain and checks the vomiting. Whenever a patient begins taking these solutions he should be cautioned to watch for any puffiness about the eyes, particularly in the morning on arising, and for slight laxity of the bowels and griping. These are signs that the patient has reached his physiological tolerance, and it should be stopped for a day or more. The swelling under the eyes may spread and amount finally to a general anasarca, and is due to a cellulitis at first and afterward to a true effusion.

Rickets in children calls for a dietetic treatment, improvement in food and digestion. No part of the body fails in force more than the digestive apparatus in the presence of this disease, probably because the alkalinity of the blood is altered and partly because the stomach can not secrete properly formed juices from imperfectly supplied glands. No tonic is comparable with arsenauro in this condition, for really inanition is the cause of the bone salts starvation. It is now an established fact that arsenauro will abort incipient phthisis.

Numerous clinical statements from physicians who are qualified observers will attest this fact. It may be laid down as a

rule that in all cases where the nutrition of the patient is not beyond repair that these solutions will produce a result never before obtained. In incipient phthisis or pulmonary consumption, I mean that very early state in which the following history is given or a similar story is elicited. A patient formerly strong and well begins to lose vivacity, life becomes a burden and exercise is distasteful. A slight daily morning or evening chill and fever develop, and a physician who is careless treats the case as one of mild malarial poisoning. Examination, however, will show an area somewhere in the lung, generally near the apex on either one or both sides, where slight prolongation of expiration with a harsh inspiratory sound is heard and percussion will give impaired resonance. In other words, the first stage of the phthisis is present and the physician must resort at once to active measures by the use of one or the other of these solutions. They seem to act by supplying vigor to the individual, removing the conditions necessary to the existence of the bacilli.

Why such remarkable results should be obtained from these solutions is a matter for further investigation, but it is nevertheless a fact that all bacilli in the sputa soon disappear, and the well-being of the patient is readily manifested.

The combinations of bromide of gold with bromide of arsenic and bromide of mercury in an aqueous solution, made by the Charles Roome Parmele Company, of New York, are certainly elegant preparations. Seemingly, they are expensive, but in reality they are not. Most patients will take ten drops three times a day, which cost them six cents a day, or about two dollars per month.

How many physicians or surgeons are aware of the fact that $\frac{1}{20}$ of a grain of bromide of gold is equal in effect to thirty grains of bromide of potassium or sodium, these gold solutions containing in each ten drops, $\frac{1}{3\,2}$ grain of the bromide of each of the metals, gold, arsenic, and mercury.

Goubert has brought forward bromide of gold as a remedy for epilepsy, and the reports on its efficiency are a remarkable testimony to its success. It is asserted of arsenauro (and is true) that it causes no depression, but stimulation of the sexual functions of both sexes. This seemingly is due to its powerful red blood producing power in the cerebro-spinal system.

There are two classes of cases which are denominated chronic that present themselves for treatment to the medical practitioner, that is, they belong to one of two classes.

Either neurotic, viz., vaso-motor, which manifests itself as neurasthenia, chorea, nervous prostration, migraine, chlorosis, anemia, melancholia, hysteria, epilepsy, etc., or else they are syphilitic, and the manifestation may be rheumatism, iritis, irido-choroiditis, periostitis, locomotor ataxia, hemiplegia, cirrhosis of the liver, etc.

If they are neurotic (vaso-motor), then arsenauro is indicated.

If specific, or there exists a deposit of connective tissues other than from traumatic causes, then mercauro is indicated.

Take the case of locomotor ataxia and note the wonderful improvement in gait and general nutrition. A case of peripheral neuritis, pronounced incurable by a renowned neurologist, was absolutely cured by six months' treatment with arsenauro. Shoemaker, in his last edition of his Materia Medica and Therapeutics, accords to these solutions a high place as alteratives, and especially mentions their use in chronic eczema. Potter also, in his new work on Materia Medica and Pharmacology, gives proper mention to these valuable agents.

Here is a point of practical value, viz:

In all anemias give mercauro in small doses, say six drops in water after meals. The marked increase of nutrition in children of syphilitic taint by using this product is promptly manifest.

The valuable combination of bromide of arsenic, bromide of gold, and bromide of mercury appeals to thinking physicians as the most valuable combination to use.

The bromide of mercury is the most acceptable to the stomach of all the salts of mercury, but if given in excess it is cast off in the urine and feces unused and wasted, straining the emunctories of the body during its passage through them.

All of us meet cases of tubercular adenitis in children whose complexions like wax show the malnutrition present in their little bodies. Give that child arsenauro and note disappearance of its glandular troubles as well as its rapid restoration to health.

In chronic Bright's disease, arsenauro is of great value and

soon decreases the albuminuria. In cases where pronounced anemia is present coincident with this disease in which great arterial pressure exists (and iron in any form is absolutely contra-indicated, because it raises the blood pressure), actual experience demonstrates that arsenauro in these cases lowers the blood pressure. In the interstitial forms of the disease preference should begiven to mercauro. We must try to arrest the development of the renal lesion and improve the general health, treat the symptoms that are not dependent upon the nephritis (except indirectly), and last treat those signs which are due to the nephritis itself.

In diabetes mellitus arsenauro is a sheet anchor and should be given in as large doses as the patient can bear for a long time. Unfortunately we do not know the innermost cause of diabetes nor the manner in which the glycosuria is brought about, thus can not explain the manner in which this combination acts. That it does act there is no question.

Evidently the therapy of this product in these cases is due to the fact that it is tonic and nutrient to the nervous system.

In conclusion let me impress upon my colleagues the wide range of usefulness of these tonic alteratives. Remember the fact that a cause exists which manifests itself by perversion of function either external or internal.

The cause may be an acute disease. If so, these products are contra-indicated.

Abandon the rut of routine prescription work, and be the student still, for the rapid march of progress in other fields is not absent in medicine.

I feel truly grateful to my colleagues who have contributed to the literature upon these very remarkable products.

He who profits by the recorded experience of others is the conscientious practitioner.

CRAWFORD, RENTON J., EDINBURGH: NOTES ON THREE CASES OF INTUSSUSCEPTION IN WHICH ABDOMINAL SECTION WAS PERFORMED, WITH RECOVERY. (*British Medical Journal.*)

Case 1. A. B., aged ten months, was seen by Dr. Suttie, and found to be suffering from symptoms of acute intussusception. After succeeding in partially reducing it Dr. Suttie found a

swelling in the right iliac region, which he could not influence by ordinary methods. He asked me to see the child with him, and I had no hesitation in recommending the abdomen to be opened. This I did, and found the intussusception at the ileo-cecal valve. Without much difficulty the bowel was withdrawn, and the abdominal opening, which was two inches in length, was stitched up. The child made a perfectly good recovery, and there has been no recurrence since.

Case 2. E. F., aged eleven months, was seen by Dr. Suttie, with symptoms of acute intussusception, which had existed for thirty-six hours. Dr. Suttie had given chloroform and tried injections and kneading, Hutchinson's position, with shaking and inflation. As these gave no relief he asked me to see the child with him. On examination I could feel a distinct lump at the splenic flexure of the colon, and it was quite evident that the sooner the abdomen was opened the better. This I accordingly did, assisted by Dr. Adamson, and without difficulty we reduced the intussusception. The child recovered, and has had no further trouble.

Case 3. M. W., aged three months, was sent to the Western Infirmary by Dr. Paterson, of Berkeley Terrace, with symptoms of intussusception, which had existed for twenty-four hours. In the absence of Prof. Buchanan I saw the child. On examination under chloroform a distinct fullness and some swelling were found along the line of the transverse and descending colon, and per rectum a well-marked protrusion was felt. No influence could be produced on this swelling by manipulation or injection; so, assisted by Dr. Walker, I opened the abdomen, and with some difficulty drew out one and a half feet of intussuscepted bowel, the last piece to come out being the cecum, with a long appendix. Very few adhesions had formed. The intestines were returned and the abdomen was stitched up. The child's bowels acted in six hours and recovery was uninterrupted.

Remarks. These three cases illustrate the great importance of operating whenever other means have been tried without avail. There is nothing to be gained by delay, as almost every case dies if not operated on and relieved with speed. To the medical men, therefore, who in the above cases recognized the condition and recommended the operation is due the credit of

the good results obtained, for the operation in itself should not destroy life. As regards the operation one word is necessary. I feel more and more in abdominal cases that the more rapidly, compatible with efficiency, the patient can be relieved the better it is, for nothing so pinches our vitality as any obstruction in the abdomen. It is truly a vital region. In opening the abdomen, having first made a small opening into the cavity, the enlarging of it is best done with scissors, as in this way bleeding is prevented and time is saved. Should a clamp be required the one I show, made for me by Mr. Down, of London, is the one I have found to be the quickest in application and most efficient; and I have adopted a double needle in stitching the abdomen, which is somewhat quicker than a single one. Every surgeon has his own particular methods, but I feel that we will all do well to keep before us what Mr. Greig Smith dwelt on in his address at Bristol—the great importance of improving our methods of manipulation and rapidity in operating, and thus we will diminish the length of operations, and by so doing increase the safety of our patients. In cases where the obstruction has existed for several days, and the patient is weak, do not give chloroform; freeze the skin with chlor-ethyl, and make a small artificial anus; this relieves the patient, and when strength returns the obstruction may be dealt with. In all operations we ought to weigh the strength of the patient against the shock of the operation, and where possible diminish the length of it.

Book Reviews.

The Practice of Medicine. A Text-Book for Practitioners and Students with Special Reference to Diagnosis and Treatment. By James Tyson, M. D., Professor of Clinical Medicine in the University of Pennsylvania and Physician to the Hospital of the University, etc., Philadelphia. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1896. Price, $5.50.

There has been a host of works on practice written in the past few years, and all have something in them which can be specially recommended. Dr. Tyson's work is of exceptional value because it represents the results of his personal observation and work, which is of greater service to the practitioner than books written by compilation, as has so often been the case. Dr. Tyson's writing is very pleasing and entertaining, and the fact of his differing from the accepted teaching of the day, and so expressing himself, as is frequently done in the text, is of itself a recommendation, especially when such an authority as the author is writing.

The general arrangement of the work is satisfactory. Section 1 is devoted to Infectious Diseases; Section 2, to Diseases of the Digestive System; Section 3, to Diseases of the Respiratory System; Section 4, to Diseases of the Heart and Blood Vessels; Section 5, to Diseases of the Blood and Blood Making Organs; Section 6, to Diseases of the Thyroid Gland; Section 7, to Diseases of the Urinary Organs; Section 8, to the Suprarenal Capsule; Section 9, to the Nervous System; Section 10, to Constitutional Diseases; Section 11, to the Muscular System; Section 12, to the Intoxications; Section 13, to Animal Parasites.

The book was issued too soon to contain a description of the Widal reaction in typhoid fever, which has been adopted all over the world now as a sure means of diagnosticating typhoid in the early stages. The diazo-reaction of Erlich is considered "negatively pathognomonic." Considerable space is devoted to the consideration of the Brand treatment, which is warmly advocated.

One is surprised to read the following paragraph with which the discussion of measles is dismissed: "I have never seen any

good reason for isolating measles as usually occurring in families. The disease is so mild in children, and so much more serious in adults, that I think it is desirable that all the children of a family should have it as soon as possible." In contradiction to this the following is quoted from a recent text-book on Diseases of Infancy and Childhood, which we think is decidedly more to the point: "In institutions for infants and young children no disease is more to be dreaded than measles, not only on account of its severity but the frequency with which, in such subjects, it is complicated by broncho-pneumonia." And it is not only limited to institutions that this complication is to be dreaded, for it is very frequently found in private practice, as well as the other complications. This theory is the same as that held by the laity, who knowingly expose their children to the exanthemata that they can have them when they are small.

Serum therapy is recommended in the treatment of diphtheria as a curative and prophylactic measure.

No mention is made of diseases located in the sigmoid flexure which are so often treated as cases of chronic dysentery. It is a pity that this trouble is not more frequently recognized.

The chapter on the diagnostic technique of diseases of the stomach is very concise and complete; the tests given are those which will be found to be of the greatest service to the general practitioner, as they are presented in such a form that the student will easily learn them. We heartily indorse the placing of these tests in the text. This chapter is one of the best in the book, if not the best.

Fourteen pages are devoted to appendicitis, beginning with an interesting study of the early history of this trouble. The classification given is, the catarrhal, the ulcerative, and the interstitial or parietal form. We have seldom seen a clearer statement of the treatment of appendicitis than expressed by the author, and are so heartily in accord with it that we reproduce in part what he has said: "As soon as the diagnosis of appendicitis is established, indeed pending its settlement, a competent surgeon should be associated with the physician. The diagnosis being established, operative treatment should be recommended, except in those cases where the disease is so far advanced as to make it unlikely that the patient will be saved by the operation.

We must know when not to operate in cases so severe that operation will prove futile, and it is due the operation that it be saved the opprobrium of such futility." In speaking of the cases to be treated medicinally when operation is refused, it is advised that opium be avoided "except in the extremest cases."

Ice is recommended in the treatment of pneumonia as reported by Mays, of Philadelphia, in recent journals.

The chapter on diseases of the nervous system is one of the completest for a text-book on practice that we have seen, the only objection being the arrangement of the topics. The new nomenclature has been adopted in using the terms suggested by Golgi and others, which is a step in the right direction, though it would have perhaps been better had the spelling as recommended by Professor Gildersleeve of *nurone* been adopted, because of it being etymologically correct. The parts of this chapter devoted to treatment are very good indeed, and though our experience does not bear out that of the author in many instances as to the result obtained with many drugs, as stated above this is a recommendation for the work rather than otherwise. The book is a valuable one, and will prove popular with teachers, practitioners, and students.

Artificial Anesthesia. A Manual of Anesthetic Agents and their Employment in the Treatment of Disease, by LAURENCE TURNBULL, M. D., Ph. G., Aural Surgeon to the Jefferson Medical College, Philadelphia. Fourth edition, revised and enlarged, with illustrations. Philadelphia: P. Blakiston, Son & Co. 1896. Price, $2.50.

As the author states in the preface to the fourth edition, it is quite a coincidence that it should be issued on the fiftieth anniversary of the discovery and introduction of ether, which anesthetic the author considers is the only one "which has proved, during all these years, the most available and the most free from danger."

Altogether, Dr. Turnbull's book is the best collection of the latest information on the details of preparation, administration, and effects of anesthetics of all kinds that we have seen, and it would be a great source of gratification to see it adopted in medical colleges as a text-book, and expert teachers appointed to instruct the students in this important branch of medicine and surgery, for as the author very correctly says in the preface

to a former edition, that no one of the "systemic anesthetics is absolutely free from risk to life," and that "the indiscriminate and careless administration of the most powerful anesthetic agents is the crying evil of the present day, and that any one should be prevented from giving an anesthetic unless he or she be provided with a certificate that they fully understand the chemical, physiological, and medical agents they are about to employ, and have had experience in their use under a competent surgeon, and have been subjected to a careful examination of the knowledge they have thus acquired." We heartily indorse this, and it can only be from such carefully prepared books as this one that this knowledge can be obtained by the student. Unfortunately, medical schools are as a rule too well satisfied to dismiss the subject of anesthetics by one or two lectures, introduced when possible by the professor of surgery, who perhaps goes over the whole field in one hour. This is not as it should be, and the time is not far off when the change will have to be made.

The author states that ether kills by "paralysis of the respiratory centers of the heart," a rather ambiguous assertion. His advice is to give ether with an open cone to minimize the dangers, and the suggestion to use the Allis inhaler we think is very good.

For the administration of chloroform the Skinner inhaler is advised, the inhaler which is known in this part of the country as Esmarch's, as the best that can be used, and the only one in our opinion that should ever be used. Attention is very rightly called to the erroneous teaching of the Hyderabad Commission that the respiration should be watched in all cases of chloroform anesthetization to the exclusion of the pulse; that no attention need be paid to the latter. In regard to the toxic effect of chloroform it is stated that "it is well to remember that anemia of the brain is secondary to the cessation of the heart's action, and that to restore vitality to the brain requires that the heart's action be restored." This is not in accord with the teaching of Hare, quoted frequently by the author, who states in a recent communication (*Therapeutic Gazette*) that "the cause of death from chloroform is usually vaso-motor depression, whereby the arterioles allow the blood to pass too freely into the

great blood-vessel areas which are found in the capillaries and veins, and as a result the man is bled into his own vessels as effectually as if bled into a bowl."

The book is an extremely interesting one, the more so because the author has included so much of value that has appeared in the current medical literature since his last work appeared which has made it an extremely valuable work.

Treatise on Gynecology, Medical and Surgical. By S. Pozzi, M. D., Professeur Agrégé á la Facultê de Mêdecine, Chirurgieu de l'Hopital Lourcuie-Pascal, Paris; Honorary Fellow of the American Gynecological Society. Translated from the French edition under the Supervision of and with Additions by Brooks H. Wells, M. D., Lecturer on Gynecology at the New York Polyclinic; Fellow of the New York Obstetrical Society and the New York Academy of Medicine. Two Volumes in one. New York: William Wood & Company, Publishers.

It can not be questioned but that gynecology owes as much or more of its advancement to the French school than to any other nation. Such names as Récamier, Jobest, de Larnballe, Levret, Dupuytren, Amussat, Koeberlé, and others, are well known to us, and have added luster to this particular branch of surgery; nor should we forget the names of Péan, Nélaton, and Cornil. As an exponent of this truly scientific branch, none is more fully recognized in this country than the name of Pozzi, the author of the great work before us. By condensing two volumes in one, every subject that in any way relates to gynecology is discussed. Indeed, the table of contents is too voluminous to mention, and only a careful perusal can reveal. Suffice that, beginning with Antisepsis and ending with the disorders of Menstruation, every subject relative to the art and science is revealed. The general practitioner would be well repaid the price of the book in reading the first two chapters devoted to Antisepsis and Asepsis, and Anesthesia, both local and general. To the specialist in gynecology and the general surgeon the book is indispensable. The illustrations are extremely numerous and splendidly executed. The colored plates are so very plain that one is made to wonder if the witnessing of the operations upon the human subject could teach more. The second volume begins with the Consideration of the Classification of Tubal Inflammations and ends with diseases of the Rectum and Pelvis. In truth it can be said that the only fault to be found in this very

valuable book is in the chapter devoted to diseases of the rectum. In these days when authors of great distinction, both in this country and Europe, have written books on these special subjects, covering five hundred or more pages to the volume, there is no excuse for an author like Pozzi skipping over so important a subject in so loose a manner as is found in this book. Twenty-nine pages only are devoted to this important class of diseases, and the information to be gained by perusing these will be little indeed. The publishers are to be congratulated in arranging so large a book that it can be easily handled, and therefore meet the requirements of students as a text-book, at the same time affording a volume that would grace the shelves of any library.

The American Year Book of Medicine and Surgery: The 1897 edition, being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals and Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged with Critical Editorial Comments by a corps of Editors, under the general editorial charge of GEORGE M. GOULD, M. D. Profusely illustrated. Philadelphia: W. B. Saunders. Sold only by Subscription. Price, cloth, $6.50; half mor., $7.50.

The scope of this work is largely given in its comprehensive title. The success of the 1896 edition was assured from the first, and the present edition has been enlarged some seventy-five pages. The editors in charge of the several departments are largely the same as those in charge of the work of preparing the last edition, the chief change being the appointment of Dr. Duhring in charge of the dermatological department in the place of Dr. Hardaway, resigned.

That there is a place for such a book as the one before us can not be gainsaid, for there is a demand for it in the library of every busy practitioner who has not the time to look up the latest opinions on any subject from the various journals at his command, for he has in this book a condensed and carefully sifted view of all that has appeared on any subject during the past year. It is not intended that the work should supplant the medical journals; indeed, it would be impossible for it to do so, for there is an enormous quantity of valuable information, on every branch of medicine, reports of rare and interesting cases, etc., that it would be impossible for the editors of this work to include in its pages. That the work of editing such a work is a

herculean task any one who has any idea of the work attending even the smallest details of an editor's task will testify.

It would be impossible for any one to attempt a review of the book in the necessarily limited space at command in the detail that it deserves. The most that we can do is to commend the work most heartily: It is scientific, practical, thorough, invaluable.

The press-work and the illustrations are all that could be desired.

Hopkin's Pond and Other Sketches. By Robert T. Morris, M. D., New York: G. P. Putnam's Sons, Publishers.

Although this delightful little book was sent by the author simply as an offering of love, and not for review, it would be a great injustice to the profession if notice was not given it in these columns. And how delightful these sketches are—how they bring to mind the green grass and still waters; the tingling of cow bells and the neighing of horses; the prattling of infant tongues, and the sunset as seen through childish eyes. The days of youth are spent over again; those dear old delightful days when we, "creeping like a snail," went "unwillingly to school." Dear old Hopkins's Pond! "To-day the water pours over the dam as of old, and the cricket's sharp chirp finds its way through the duller sounds. The muskrat makes a rippling brake in the moonlight, but I do not know whose boy eagerly marks the course now." In this book the sportsman will find great joy, so lifelike are the descriptions given of his life. The fisherman, the huntsman, all, find such refreshing descriptions here. To read it is like taking a drink of pure spring water out of the old gourd that hung at the well, or to linger in the blue grass pasture, and watch the cows come home. The busy doctor should have this little book to read to his children after his daily routine work, for it will bring him back to the days when he too was a child, and knew nothing of the great mysterious things that have shot in and around him as he has pursued his professional life—of the days when the sun shone so brightly, ere the shadows had crept into his life. We thank you, Doctor Morris, for making us young again, even if it is only in thought, and we beg of you—write some more. J. M. M.

Anomalies and Curiosities of Medicine. Being an Encyclopedic Collection of Rare and Extraordinary Cases, and of the Most Striking Instances of Abnormality in All Branches of Medicine and Surgery, derived from an Exhaustive Research of Medical Literature from its Origin to the Present Day, Abstracted, Classified, Annotated, and Indexed. By GEORGE M. GOULD, A. M., M. D., and WALTER L. PYLE, A. M., M. D. Imperial octavo, 968 pages, with 295 illustrations in the text, and 12 halftone and colored plates. Philadelphia: W. B. Saunders, 925 Walnut Street. 1897. Prices: Cloth, $6.00 net; half morocco, $7.00 net. Sold only by subscription.

If "Medical Literature" was substituted for "Medicine" in the above title the name would apply to the book before us. It seems queer that some one has not thought of collecting from the literature of the past, which has been full of records of curiosities and freaks, just such an assortment of rarities as contained in this book, long before this.

At a great sacrifice of time and labor the authors have collected and put in very attractive form a rare collection of cases, which have any semblance of authenticity.

The work is certainly interesting and entertaining, and will prove valuable to those who may meet with abnormal cases in practice.

It seems a pity, though, that the authors did not embrace the opportunity afforded by such a book to strike a blow at the unscientific belief that malformations are due to maternal impressions; certainly the cases recorded do not establish maternal impressions as a fact.

Medical Latin, Designed Especially for Elementary Training of Medical Students. By W. T. ST. CLAIR, Instructor of Latin in the Kentucky School of Medicine and the Male High School, Louisville, Ky. Philadelphia: P. Blakiston, Son & Co. 1897. Price, $1.00.

The Education of the Central Nervous System. By REUBEN POST HALLECK, M. A. (Yale), Louisville, Ky. Published by The MacMillan Company, New York. 1897. Price, $1.00.

It is with special pride that we notice the advent of these two books, written by Louisville men—one, though a layman, an instructor in a medical school.

The little work by Professor St. Clair, as stated in its title, was specially prepared for medical students, being a thorough groundwork for the part of the Latin language most needed in their studies. With the lengthening of the sessions of all colleges

to four years, the student is not so crowded all of the time, and can devote some study to the classics; but without such a book as the one before us it would be needless for him to attempt, in the more or less limited time he has at his disposal, a course of study in Latin. No attempt has been made by the author to give a large vocabulary, but what has been included in its pages is so woven in the lessons from the beginning that the student has mastered it before he is aware of it. The exercises in translations are of special service, as they are well chosen with a view of making the student familiar with the steps of constructing a proper prescription, details little understood by the average student.

Being the first in the field so far as we know, and being so attractive and beautiful, it can not help but be appreciated by teachers and students.

This small octavo volume of two hundred and fifty-eight pages is a study of foundations, especially of sensory and motor training, by Mr. Halleck, a professor in the Louisville Male High School, and author of a work on "Psychology and Psychic Culture." The author has a smooth, easy style, uses good English, and wields a facile pen. The author states that the principal object of this book is to prescribe for our complex central nervous system, at the proper time, the special kinds of exercise, sensory, motor, and ideational, demanded for full development. He restricts this work to its proper field, and does not offer it as a substitute for the thorough study of psychology. Without modifications in the central nervous system no one can be educated. If the brain cells are allowed to pass the plastic stage without being subjected to the proper stimuli or training, they will never fully develop. The majority of adults have many undeveloped spots in their brains, the higher processes of thought are dependent modifications in brain cells, and the highest intellectual superstructure can be no firmer than the sensory foundation, the author thinks, has not been properly applied in training these cells, and his book is a plea for early purposive training of the central nervous system, while its brief morning of plasticity lasts. The book is suggestive, and is an attempt in the right direction. The author has set for himself a difficult task, and

on the whole, we fear, will fail. Probably a majority of parents and teachers who read the work will not fully grasp its contents, and, not appreciating its spirit, will throw it aside as too deep or too theoretical. A minority may seriously attempt to master it and to put into practice its precepts, but unless guided by discriminating judgment, and prepared to find many exceptions and notable failures, may undoubtedly become dissatisfied and discouraged, and do injustice to what is really an honest and serious effort to help. We fear too many and too grievous burdens are being laid on the young; and are not our present methods of education calculated to destroy all imagination in the child?

Swedish Movements or Medical Gymnastics. By Dr. T. J. Hartelius, Director of the Central Gymnastic Institute of Stockholm, Sweden. Translated by A. B. Olsen, M. D., with Introduction and Notes by J. H. Kellogg, M. D., Battle Creek, Mich. Published by the Modern Medicine Co., Battle Creek, Mich. 1896.

This book is an extremely accurate translation of the original book by Dr. Hartelius, who is considered the authority of this method of massage both in this country and abroad. This translation is not an easy one, especially as regards the specific directions of the operator as to the different movements, the exact equivalent of the Swedish word not being easy to find in the English language.

In Professor Hartelius' book on Swedish Gymnastics, massage is considered purely and simply according to the Swedish system, and has proved fully beneficial separately or combined with Swedish Gymnastics without mixture of any fancy movements of less importance, as given on pages 79 to 91 of this book.

Being the only English translation of the original work, it will be very valuable to every physician and nurse.

Principles or Guides: For a Better Selection or Classification of Consumptives Amenable to High Altitude Treatment and to the Selection of Patients who may be more Successfully Treated in the Environment to which they were Accustomed Previous to their Illness. By A. Edgar Tussey, M. D., Adjunct Professor of Diseases of the Chest in the Philadelphia Polyclinic and School for Graduates in Medicine, etc., Philadelphia: P. Blakiston, Son & Co. 1896. Price, $1.50.

That there is a crying need for such a book as Dr. Tussey has written is evidenced by the fact that the physicians of one of our Western States which has been noted in the past for the

wonderful climate for consumptives, and which in consequence has been overrun with consumptives afflicted in all degrees of severity, protested against the overcrowding of their country by those hopelessly sick who simply come out to die. It is the early recognition of phthisis that is essential, and the careful weighing of all the points in favor of staying at home under careful supervision or going to some strange and uncongenial locality for the benefit of the altitude. It is true that patients do sometimes go from home without the advice of their physicians when they are beyond all possible hope of cure or benefit, and unfortunately it is also true that patients are advised by their family doctor it may be, or by one especially adapted for diagnosing lesions in the chest, when there is positively no hope that they may be benefited by a sojourn in a higher place. These are the ones to be censured, and by careful reading of the work by Dr. Tussey such mistakes would be prevented.

Books and Pamphlets Received.

Marvelous Mechanism of the Human Body. The human body is an epitome in Nature of all mechanics, all hydraulics, all architecture, all machinery of every kind. There are more than three hundred and ten mechanical movements known to mechanics to-day, and all of these are but modifications of those found in the human body. Here are found all the bars, levers, joints, pulleys, pumps, pipes, wheels, and axles, ball and socket movements, beams, girders, trusses, buffers, arches, columns, cables, and supports known to science. At every point man's best mechanical work can be shown to be but adaptations of processes of the human body, a revelation of first principles used in Nature.

The Eye a Perfect Camera. The eye is a perfect photographer's camera. The retina is the dry plate upon which are focused all objects by means of the crystalline lens. The cavity behind this lens is the camera. The iris and pupil are the diaphragm. The eyelid is the drop-shutter. The draping of the optical dark room is the only black membrane in the entire body. This miniature camera is self-focusing, self-loading, and self-developing, and takes millions of pictures every day, in colors, and enlarged to life size. William George Jordan in March Ladies' Home Journal.

Announcement. E. B. Treat, Publisher, New York, has in press for issuance early in 1897, the International Medical Annual; being the fifteenth yearly issue of that well-known one volume reference work. The prospectus shows that the volume will be the result of the labors of upward of forty physicians and surgeons, of international reputation, and will present the world's progress in medical science.

The publisher states that the kind reception accorded to the Medical Annual has rendered it possible for him to spare no expense in its production; while the editorial staff has devoted a large amount of time and labor in so condensing the literary matter as to confine the volume within a reasonable size, without omitting facts of practical importance.

"To those who need the condensed and well-arranged presentation of the medical advances of the past year—and this class must necessarily include all physicians—we heartily commend the International Medical Annual."

The value of the work will be greatly enhanced by the thoroughness of illustration; both colored plates and photographic reproductions in black and white will be used wherever helpful in elucidating the text.

The volume will contain about 700 pages. The price will be the same as heretofore, $2.75. Full descriptive circular will be sent upon application to the publisher.

The Local Application of Cold in Acute Pneumonia. Being the Third Collective Report, with a Discussion of Fever in this Disease. Thomas J. Mays, Philadelphia, Pa. Reprinted from the Medical and Surgical Reporter.

The Mammalian Cerebellum, Part 1, the Development of the Cerebellum in Man and the Cat. By Bert B. Stroud, of Ithaca, N. Y. Reprinted from the Journal of Comparative Neurology.

Stricture of the Urethra. A Report of One Hundred Cases treated by Internal Urethrotomy. By William H. Dukeman, Los Angeles, Cal. Reprint from the Pacific Medical Journal.

Gonorrheal Iritis and Non-Suppurative Gonorrheal Conjunctivitis and their Pathology. By William Cheatham, Louisville, Ky. Reprinted from the Archives of Ophthalmology.

Notes on Some of the Newer Remedies used in Diseases of the Skin. By L. Duncan Bulkley, New York City. Reprinted from the Journal of the American Medical Association.

A Case of Acute Tuberculosis Treated with Dr. Paquin's Antitubercle Serum; Recovery. By J. R. Lemen, St. Louis, Mo. Reprinted from the New York Medical Journal.

The Treatment of Stricture, Granulated Urethritis and Prostatitis by Electricity and Allied Remedies. By G. W. Overall, St. Louis, Mo. Reprinted from the Medical Mirror.

Toxicosis of the Nervous System as a Cause of Pulmonary Consumption. By Thomas J. Mays, Philadelphia, Pa. Reprinted from the Journal of Nervous and Mental Diseases.

Report of a Case of Partial Laryngectomy for Carcinoma of the Larynx. By Max Thorner, Cincinnati, O. Reprinted from the Journal of the American Medical Association.

Pathological Conditions Following Piercing of Lobules of the Ear. By M. Thorner, Cincinnati, O. Reprinted from the Journal of the American Medical Association.

The Treatment of Tuberculosis by Injections of Immunized Blood Serum. By Paul Paquin, St. Louis, Mo. Reprinted from the Journal of the American Medical Association.

The Relations of the Medical Examining Boards to the State, to the Schools, and to Each Other. By William Warren Potter, Buffalo, N. Y. Reprinted from the Bulletin of the Academy of Medicine.

Transactions of the Medical Society of the State of North Carolina, Forty-Third Annual Meeting, held at Winston-Salem, N. C., May 12, 13, and 14, 1896.

Antidiphtheritic and Antistreptococcic Serums, their Nature, Method of Production and Application for the Relief of Disease. By C. C. Fite, New York.

Autoscopy of the Larynx and of the Trachea. By M. Thorner, Cincinnati, O. Reprinted from the Journal of the American Medical Association.

Remarks on the Management of Glaucoma. By Leartus Connor, Detroit, Mich. Reprinted from the Journal of the American Medical Association.

The Want of College Instruction in Electro-Therapeutics. By Robert Newman, New York. Reprint from the Electrical Journal of Chicago.

Inebriety, Its Source, Prevention, and Cure. By Charles Follen Palmer, New York, Chicago, Toronto. Frank H. Revell Company. 1896.

The Science of Generation and its Phenomena. By William F. Barclay, Pittsburgh, Pa. Reprinted from the Maryland Medical Journal.

Remarks on the Causes of Glaucoma. By Leartus Connor, Detroit, Mich. Reprint from the Journal of the American Medical Association.

Anesthesia of the Trunk in Locomotor Ataxia. By Hugh T. Patrick, Chicago, Ill. Reprinted from the New York Medical Journal.

On the Cause and Treatment of the Uric Acid Diathesis. By N. A. Olive, Waco, Texas. Reprinted from the Texas Medical Journal.

Late Syphilitic Manifestations in the Pharynx. By J. Homer Coulter, Chicago, Ill. Reprinted from the Peoria Medical Journal.

How Long is Syphilis Contagious. By C. Travis Drennen, Hot Springs, Ark. Reprinted from the Memphis Medical Monthly.

Gonorrhea, its Ravages and Prophylaxis. By Albert H. Burr, Chicago, Ill. Reprinted from the Chicago Medical Recorder.

The Diagnosis of Pharyngeal Ulceration. By J. Homer Coulter, Chicago, Ill. Reprinted from the Chicago Medical Recorder.

Eleventh Annual Report of the John N. Norton Memorial Infirmary. Miss N. Gillette, Superintendent. Louisville, Ky.

Anterior Soft Hypertrophies of the Nasal Septum. By Edwin Pynchon, Chicago, Ill. Reprinted from the Laryngoscope.

Surgical Clinic at St. Mary's Hospital, Detroit, Mich. By H. O. Walker, Detroit, Mich. Reprinted from the Leucocyte.

The Palliative Treatment of Hernia. By Jacob Geiger, St. Joseph, Mo. Reprinted from the St. Joseph Medical Herald.

The Practical Application of Trusses. By C. H. Guibor, Topeka, Kas. Reprinted from the Kansas Medical Journal.

Injury to Brain; Operation, Recovery. By D. C. Bowen, Nolin, Ky. Reprinted from American Practitioner and News.

A Study in Appendicitis. By R. D. Pratt, Shelbyville, Ky. Reprinted from the American Practitioner and News.

Solutions Dobell. By Edwin Pynchon, Chicago, Ill. Reprinted from Annals of Ophthalmology and Otology.

Petroleum in Pulmonary Affections. By E. P. Jones. Reprinted from the New England Medical Monthly.

On Anatomy of the Anus. By Bert. B. Stroud, of Ithaca, N. Y. Reprinted from the Annals of Surgery.

Modern Surgical Dressings. By F. B. Kilmer. Reprinted from the American Journal of Pharmacy.

The Treatment of Carcinoma Mammæ. By Carl Beck, New York, N. Y Reprinted from The Clinical Recorder.

Pyothorax. By Carl Beck, New York. Reprinted from the International Medical Magazine.

Transactions from the British Orthopedic Society, Volume 1, Sessions of 1894-5.

Notes and Queries.

We have received the following, which is self explanatory:

The Middleburgh Home for Incurables. This Home is for children of both sexes, especially such cases as by reason of some physical disability are debarred from schools for backward and nervous children.

It provides education, employment, skilled attention, and necessary medical treatment.

The Principals have had special training and experience necessary for the work, Miss Taylor being a graduate of the Philadelphia Orthopedic Hospital.

The Home is open during the whole year. Holidays are optional at any period.

The Home is situated in the Blue Ridge Mountains, in a healthful and beautiful country.

Terms are strictly moderate, and vary according to the requirements of each case.

For list of references, further information and particulars,

Address Miss Katherine Dudley,
Miss Mary Taylor,
Middleburgh, Virginia.

Miss Taylor refers to Dr. F. X. Dercum and Dr. Wharton Sinkler, and the staff of the Orthopedic Hospital of Philadelphia.

Miss Dudley is the daughter of Rt. Rev. T. U. Dudley, Bishop of the Diocese of Kentucky, and has spent several months in the special preparation for this work. Their hearts are certainly in the work, and it should succeed.

"The Nursing World" Bedside Record for the use of physicians and trained nurses, and supplied by John Carle & Sons, is the most useful and convenient bedside record book that we have seen. It is the outgrowth of a prize competition among the readers of the "Nursing World," and embodies the essential elements of a large number of designs with special features introduced by the editor of that journal, Dr. J. E. Brown. The exclusive right to publish this record has been secured by the Imperial Granum Company, and they very generously have agreed to supply any physician or trained nurse with copies of them, free, if they will make application for them to the shipping

department of this company, Messrs. John Carle & Sons, 153 Water Street, New York.

It is a source of gratification, too, that we are able to record that the Imperial Granum Company has withdrawn all advertisements from publications other than medical ones, and hereafter publication of their advertisements will be through the medium of the medical press exclusively.

THE fifteenth annual meeting of the American Medical Association will be held in Philadelphia, June 1, 2, 3, and 4, 1897. The addresses will be made as follows: The Presidential Address, Nicholas Senn, Chicago, Ill.; Address in Surgery, William W. Keen, Philadelphia, Pa.; Address in Medicine, Austin Flint, New York, N. Y.; Address in State Medicine, John B. Hamilton, Chicago, Ill. Chairman of the Committee of Arrangements, H. A. Hare, 222 S. Fifteenth Street, Philadelphia, Pa.

THE Fifth Annual Meeting of the Tri-States Medical Society of Iowa, Illinois, and Missouri will be held in St. Louis, April 6, 7, and 8, 1897. A large number of valuable papers will be read. Dr. Joseph Price, of Philadelphia, will hold a Surgical Clinic, Dr. James T. Whittaker, of Cincinnati, the Medical Clinic, and Dr. Dudley Reynolds, Ophthalmic Clinic. Dr. G. Frank Lydston, of Chicago, will entertain the members with an original story during one of the evening sessions.

AT a recent meeting of the Board of Trustees of the Jefferson Medical College, Philadelphia, Dr. J. Chalmers DaCosta was elected Clinical Professor of Surgery. Dr. DaCosta has been connected with the College for many years, and has recently been Demonstrator of Surgery and Chief of the Out-patients' Department.

THE CANADIAN JOURNAL OF MEDICINE AND SURGERY is the latest addition to our exchange table. It is published in Toronto, is a monthly, and the subscription price is $1.00 per annum. Special attention is given in each issue to the reporting of the County Medical Societies, which will make the Journal of special interest to the Canadian practitioners.

DR. LOUIS FRANK has removed his office from his former location to No. 129 West Chestnut Street, northeast corner of Second.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"ALIS VOLAT PROPRIIS."

Vol. IV. JULY, 1897. No. 3.

Original Contributions.

SIMPLE ULCERATION OF THE RECTAL POUCH.*

BY A. B. COOKE, A. M., M. D.,

Professor of Anatomy and Clinical Lecturer on Diseases of the Rectum, Medical Department University of Nashville; Secretary and Treasurer Nashville Academy of Medicine; Member Tennessee State Medical Society; Middle Tennessee Medical Association, etc.

NASHVILLE, TENN.

Mr. President and Gentlemen: So far as my observation qualifies me to express an opinion, this is one of the most frequent as well as one of the most intractable of all rectal diseases. This statement is made with the full knowledge that appeal to authority would not sustain it. An American author† of international reputation, in his work on Diseases of the Rectum, introduces the chapter on Ulceration with this terse and emphatic sentence: "Simple ulceration of the rectum, located above the sphincter muscles, is a very uncommon disease," and in this view the majority of writers concur. But my experience, far more limited than theirs it is true, has been so widely different as to direct my attention forcibly to this point. With the single exception of hemorrhoids, no trouble has been so frequent in my practice as ulceration. It may indeed well be that the discrepancy noted has been due to mere coincidence in my work; but I shall not be surprised if time verifies the conclusion I have drawn.

It would be fruitless in the discussion of this subject to enter into the question of pathology. The controversy which has been

*Read before the Southern Kentucky Medical Association, Hopkinsville, Ky., April 15, 1897.
†Mathews.

and is yet being waged upon this point has only served to develop views as widely varied as their champions are doughty. For the purposes of this article we may classify the subject under three main heads, viz., simple ulceration, including the traumatic, catarrhal, and dysenteric varieties; specific, including the gonorrheal and diphtheritic, and secondary, embracing the syphilitic, tubercular, and malignant forms in which the ulceration is subsequent to and the sequence of deposit in the gut wall. The time allowed me would scarcely permit a discriminating glance at these separate varieties, nor indeed is it necessary. Recognizing the important fact that the symptoms of ulceration located within the rectal pouch, whatever its origin, are essentially identical, we have at once a vantage point from which to view the subject in its more general and practical bearings.

In the remarks to follow exclusive reference is had to the first class above mentioned, namely, simple ulceration.

The great underlying factor in the production of this disease is venous congestion. In other situations rightly regarded pathological, here it may be said to be, for at least a portion of each day, the normal condition. To properly understand this fact it is necessary that we briefly review the anatomy of the rectum with reference to its blood supply.

It will be remembered that the entire rectum above the sphincter muscles is supplied by the superior hemorrhoidal artery, which is the direct continuation of the inferior mesenteric, while the anal canal and contiguous structures are supplied by the middle and inferior hemorrhoidal, branches direct and secondary respectively of the internal iliac. The return circulation is closely analogous. The veins which return the blood from the pouch of the rectum originate in minute pools immediately beneath the mucous membrane and just above the internal sphincter, and pass upward along with the arteries, perforating the muscular coat of the gut wall about four inches above the anus, and gradually uniting to form the inferior mesenteric vein. Now, bearing in mind that the inferior mesenteric is one of the radicles of the portal system, explanation of the proneness of this organ to congestion is not far to seek.

In the first place, in common with the other branches of the portal system, this vein and its radicles are destitute of valves,

so that the erect position natural to man causes the weight of the superimposed columns of blood to fall in large measure upon the venules of origin. Again, after a hearty meal, and during the process of digestion, all the veins of the portal system are more or less engorged with blood, and consequently at such times the inferior mesenteric may be said to be in a state of physiological congestion. Any derangement of the liver, whether organic or functional, whereby interference with its circulation results, would tend toward a similar end. Under this head belongs that indefinite though popular and widespread ailment known as hepatic torpidity or "torpid liver."

Likewise a condition approaching stasis might easily be and is frequently caused by pressure from without the rectal walls incident to a pelvic neoplasm, a greatly enlarged prostate, or a retro-displaced uterus.

And finally in this connection constipation remains to be considered. This will require a somewhat more extended reference. Of all the causes to which rectal diseases are properly attributable, this is at once the most universal and the most important. In the production of simple ulceration it plays a twofold part, each of conspicuous significance, and, alone or together, doubtless furnishing the true explanation of a large proportion of all cases.

As predisposing cause it acts to the same end, though in a different way, as the causes above mentioned, namely, by inducing rectal congestion. The passage of a large costive stool, requiring as it does the co-operation of the powerful abdominal muscles, is in a direction opposite to the return blood-current, so that a congestion, active though perhaps only temporary, results at every movement. Frequently repeated, as in the victims of habitual constipation, this must be a potent factor in weakening the vessel walls, thus laying the foundation for the development of ulceration as well as other pathological conditions. The *modus operandi* of this factor may be well illustrated by conceiving of an elastic bandage applied with moderate firmness around the arm or leg toward the distal extremity. With each turn the congestion of the hand or foot becomes more pronounced and the veins more distended and prominent. In the case in point the bandage is replaced by the elastic rectal wall, and the solid substance of

arm or leg by the hard fecal mass, while the analogous motion is supplied by the latter instead of the former.

As exciting cause constipation plays a part even more noteworthy in the production of this disease. Ball* calls attention to the fact that chemical action due to putrefactive changes in retained feces may excite inflammation of the mucous membrane, and this if long continued, as in chronic constipation, or if of sufficient intensity might easily establish an ulcerative process.

But the chief action of the costive habit in bringing about this result is a more direct and evident one. The mechanical irritation incident to a large, hard passage, especially if, as is not infrequently the case, it presents a roughened surface or contains a projecting foreign body, by causing an abrasion or other injury of the tender rectal mucosa, often constitutes the inception of this trouble.

In fact traumatism, however produced, must be regarded the prime exciting cause of this disease. The original injury, though in itself simple and trivial, is sustained by an organ unique both in structure and function, and one in which, by reason of its peculiar office, the reparative process is necessarily slow and subject to repeated interruptions.

In addition to constipation the initial lesion may spring from other causes which are worthy of at least brief allusion. The pressure of the child's head in parturition is cited by certain authors as a frequent cause. If this were true, the proportion of cases should largely preponderate in women, and though not so often encountered as in men, except perhaps in hospital and dispensary practice, it is probable that such a preponderance does exist.

The introduction of foreign bodies from without is another cause of traumatism, by no means so infrequent as might be supposed, if trickery, concealment, and the various forms of sexual perversion are borne in mind.

Among the most prominent exciting causes of ulceration must be reckoned the traumatism sustained at the hands of the surgeon in operations for internal hemorrhoids, fistulæ, etc. Owing to the congestion attendant upon these diseases the conditions are always favorable for the development of indolent,

*"The Rectum and Anus," page 52.

sluggish wounds, and chronic ulceration is a natural sequence. Especially does it occur when injudicious methods of operating (notably the injection of internal hemorrhoids) are resorted to, and when the patient is allowed to assume the erect position too soon thereafter. It is probable, also, that the habitual use of the enema syringe, in pursuance of a widespread but pernicious fad, figures as an etiological factor.

While it is very likely true, as I have endeavored to explain, that traumatism, sustained in one of the various ways alluded to by tissues in a state of chronic congestion, is the primal cause of this disease, it would scarcely be justifiable to eliminate wholly from consideration the catarrhal and dysenteric forms. That these forms are met with is the practically unanimous verdict of authorities. Speaking for myself, however, these divisions seem superfluous. In regard to the catarrhal variety — remembering the peculiar conformation and function of this organ, the theory that it may originate under the conditions named, in an injury, perhaps itself unrecognized, does no violence to the most exacting intelligence. Irritation due to the presence of a polypus or to oxyurides, and "cold and damp," are specifically mentioned as causes of this variety; but these are so rarely in evidence that traumatism, as comprehending the vast majority of cases, offers to my mind a far more rational explanation.

The limits of my time and of your patience will not permit an effort to untangle the bewildering maze of argument and opinion surrounding the dysenteric variety. Briefly, though, I may be permitted to state that I can not accept the dysentery proposition. Similarity of the discharges in the two diseases is doubtless the occasion of the confusion on the subject. The very absence of statistics on the point would argue the extreme rarity of this special form of ulceration. I can readily conceive of proctitis resulting in loss of substance, supervening from the irritation of chronic dysenteric discharges. But that dysenteric ulceration of the rectal pouch exists *sui generis*, except in rare and doubtful instances, at present constitutes merely an unnecessary and undemonstrated hypothesis.

It must be borne in mind that proctitis from any cause may eventuate in ulceration. Indeed, whether result or mere coincidence, the latter is seldom present without the former, and in

many cases the difference seems to consist rather in degree than in kind.

And finally in reference to etiology it only remains to note that the predisposing influences of certain depraved or vitiated states of the general system are potent elements in the production and maintenance of this disease. The debilitated conditions incident to protracted fevers and the later stages of phthisis will be readily recognized as those more prominently referred to. Less readily recognized but deserving of special emphasis in this connection are the gouty diathesis and organic disease of the kidney. Though obscure and difficult of explanation, this relation can not be ignored. In the case of a well-nourished or plethoric patient with ulceration of the rectum for which no satisfactory local cause can be assigned, the astute diagnostician will not fail to include the kidneys and their function in his investigations.

The symptoms of ulceration of the rectal pouch vary somewhat with the location of the lesion, and may be divided into two main groups: First, those referable directly to the rectum, and second, those which manifest themselves in other situations adjacent and remote.

The first group may be subdivided into (1) diarrhea, (2) discharges, (3) pain, (4) hemorrhage, and (5) pruritus ani, characteristic and distinctive in the order given. These symptoms do not usually exist singly, but associated two, three, or all in a given case.

(1) *Diarrhea.* At a recent meeting of the Nashville Academy of Medicine, in a discussion on the subject of constipation, one of the most prominent and reputable physicians of that city named ulceration as a frequent cause of that complaint. Thinking he had made a slip of the tongue, I called his attention to the statement, remarking that my impressions were radically different on the point mentioned, and citing various authorities in support thereof. To my surprise, and I may add consternation, he replied that he had made no mistake; that in a practice of more than twenty years he had had from a hundred to a hundred and fifty cases under his care, in all of which, with perhaps a single exception, constipation had been a marked feature. The argument closed with the assertion on his part that these were the

facts of his experience, "authorities to the contrary notwithstanding."*

This is one of the most remarkable experiences with which I am conversant in the whole range of medical history. Simply setting it apart as unique and beyond discussion, I desire to lay special stress upon this symptom.

If there is any disease in the entire category which is attended by a constant symptom, that disease is ulceration of the rectal pouch, and that symptom diarrhea. The rationale of this phenomenon is in nowise occult. Secretion from the ulceration together with that from the co-existing proctitis acts as a solvent of the fecal matter, and at the same time supplies abnormal lubricity. In addition it is an irritant, powerfully augmenting peristalsis and exciting to expulsive effort which in the advanced stages becomes almost continuous. As associate factor must also be reckoned reflex irritation, which likewise results in heightened peristalsis, and in consequence of which gastric and intestinal indigestion with its well-known sequelæ supervenes. The earliest in development, this is also the most persistent and the most lasting symptom. There can be no doubt that numberless cases of ulceration, because of the similarity of symptoms, have been treated as "chronic diarrhea" and "chronic dysentery;" and I dare say the grass waves green to-day over the grave of many a victim to physicians' misguided efforts, not to speak of others who exist in living death, slaves to the opium habit.

(2) The discharges which constitute the second characteristic symptom of this disease consist of mucus and pus, with not infrequently some admixture of blood. They differ from those of proctitis in one noteworthy and important particular, viz., in containing pus. Whenever this occurs in discharges from the bowel, the presence of a breach in the mucous membrane somewhere may be accepted as practically assured. As my friend, Dr. Mathews, once remarked to me in this connection, "Pus always means something."

(3) Pain is a variable symptom, its character depending very largely on the site of the lesion. As a rule, the nearer the ulceration to the anus, the more sensibly is pain perceived. So insidiously does the disease develop that the first sensation is

* Dr. W. F. Glenn, Academy of Medicine, January 13, 1897.

usually one of slight discomfort—just sufficient to direct the patient's attention to his rectum. As the trouble progresses, nearly any degree of suffering may be experienced, the extreme being met with in the intense agony of those cases in which the anus is implicated.

(4) Hemorrhage and (5) pruritus ani are adventitious symptoms, the former due to the erosion of a blood-vessel by the disease process, the latter most probably to the contact of the irritating discharges from above with the delicate tissues of the anal canal and surrounding integument.

The second group of symptoms, that is, those manifesting themselves outside the rectum, involving as it does the intricate question of reflex nerve action, scarcely admits of discussion here. It is well to remember, however, that pain, instead of being confined to the rectum, may localize itself in the sacral or coccygeal region, in any of the abdominal or pelvic viscera, or be referred to the terminal branches of the sacral plexus. Occasionally no pain whatever will be noticeable in the part directly involved, and yet the reflex phenomena be strongly marked. In such event confusion and error may result unless other symptoms, more reliable because never absent, be ascertained and duly weighed.

Summing up the symptoms of this disease and its effects upon the constitution, I can do no better than to reproduce a portion of Allingham's classic description, as quoted by Kelsey: "In the majority of these cases the earliest symptom is morning diarrhea, and that of a peculiar character. . . . The patient will tell you that the instant he gets out of bed he feels a most urgent desire to go to stool; he does so, but the result is not satisfactory. What he passes is generally wind, a little loose motion, and some discharge resembling coffee-grounds both in color and consistence. . . . The patient in all probability has tenesmus and does not feel relieved; there is something of a burning and uncomfortable sensation, but not actual pain. Before he is dressed very likely he has again to seek the closet; this time he passes more motion, often lumpy, and occasionally smeared with blood. It also may happen that after breakfast, . . . the bowels will again act; after this he feels all right, and goes about his business for the rest of the day, only perhaps being occasionally reminded

by a disagreeable sensation that he has something wrong with his bowel. . . .

"After this condition has lasted for some months, more or less, as influenced by the seat of the ulceration and the rapidity of its extension, the patient begins to have more burning pain after an evacuation; there is also greater straining and an increase in the quantity of the discharge from the bowel; there is now not so much jelly-like matter, but more pus; more of the coffee-ground discharge and blood. The pain suffered is not very acute, but very wearying, described as like a dull toothache, and it is induced now by much standing about or walking. At this stage of the complaint the diarrhea comes on in the evening as well as in the morning, and the patient's health begins to give way; . . . he is dyspeptic, loses his appetite, and has pain in the rectum during the night which disturbs rest; he also has wandering and apparently anomalous pains in the back, hips, down the legs, and sometimes in the penis."

From what has been said the gravity of the disease can scarcely be overestimated. Its tendency is never toward spontaneous recovery. On the other hand, if allowed to go untreated, stricture is the logical sequence. And whether this results or not, in the later stages the patient's condition becomes truly pitiable, the greater part of his time by night as well as day being spent in fruitless efforts to rid his rectum of its irritating contents. Finally all sphincteric power may be lost, when to pity disgust is added, and death comes as a welcome relief.

With ordinary care the diagnosis of this trouble is not a difficult matter. It is far easier, however, to trust in Providence and a diarrhea mixture. And, be it said to the shame of our profession, whether seldom or often, this course is pursued. Until the great truth is fully learned that rectal diseases can not be diagnosed without physical examination, disaster will continue to be the portion of patients and reproach that of physicians.

No more characteristic group of symptoms attends any disease in any part of the body than ulceration of the rectal pouch. Yet, though strongly indicative, they are not sufficient. If we would be accurate as to the location and character of the lesion, exploration of the rectum must be our only dependence. And even this is not always satisfactory unless it be made under

anesthesia. In case of doubt, except when positively contra-indicated, this should invariably be demanded. If refused, the satisfaction of a clear conscience affords some solace, and the patient assumes all responsibility as to the issue.

What I have to say on treatment shall be briefly said. Kelsey remarks: *"A case of severe or extensive ulceration of the rectum is perhaps one which calls for as much skill in treatment and yields as poor results as any thing in the range of surgery." My experience certainly corroborates this statement. But the obstacles to success are not insurmountable if certain basic truths are grasped and conformed to. If I am correct in the views advanced upon etiology, the most significant of these truths is also the most self-evident. If it is true that venous congestion is the prime underlying cause of this disease, then the removal of that cause must be the first consideration of treatment. This can only be accomplished in one way, viz., by rest in the recumbent position. To be effective it must be absolute. No halfway measure will answer. The patient must go regularly to bed and remain there continuously until the reparative process has at least become well established, let it require one, two, or six weeks. A strictly analogous condition is met with in varicose ulcer of the leg, the accepted treatment of which by strapping and elevating the limb well illustrates the importance of this principle and at the same time suggests the reasons for its effectiveness.

This point being gained, the next question is diet. This should be light but nourishing, and of such a character as will leave the smallest possible residue.

Before beginning treatment the bowels should be thoroughly evacuated. For this purpose, and thereafter when necessary, nothing acts better than broken doses of calomel followed by a Seidlitz powder or other saline, and an enema, medicated if preferred, to cleanse the diseased surface of any fecal matter which may have found lodgment in passing.

In severe cases, or those which have existed for considerable time, I have found no plan of treatment satisfactory unless preceded by divulsion of the sphincters. This procedure seems to exert a tonic effect on the dilated blood-vessels and to insure

*Diseases of the Rectum and Anus, p. 310.

a more ready response to topical applications. These applications may consist of a strong solution of nitrate of silver, pure carbolic acid, etc. Instead of topical applications, in selected cases I have used the sharp curette, followed by gauze packing, with even greater and more rapid benefit. Subsequent treatment should consist of mild astringents, stimulants, or sedatives, as the case may demand. A few of the agents most commonly employed are fluid hydrastis, sulphate of zinc, iodoform, aristol, and balsam of peru; and solutions, ointments, powders, and suppositories constitute their forms of application. Cases are not rare in which the changes require to be rung from one class and method of application to another, and often the ingenuity of the surgeon is sadly taxed.

It is important that the speculum be inserted no oftener than seems absolutely necessary. In the nature of things it must act as an irritant and retard the healing process.

Cases will occasionally be encountered, especially when seen in their early stages, in which a few applications of a two to four per cent. solution of nitrate of silver, together with regulation of the diet, will be effective without rest in bed or divulsion of the sphincter. But these are rare exceptions—most probably because the physician's advice is seldom sought until the disease has become chronic and the various household and patent remedies for "looseness of the bowels" and "itching piles" have been exhausted.

At whatever stage seen, attention to the general health should never be omitted. When least suspected the rectal trouble may prove to be but the advance sign of some profound bodily dyscrasia.

In the majority of cases a course of tonics and reconstructives will prove a valuable adjuvant to any line of treatment.

Certain desperate cases may from time to time be met in which the ravages of the disease can not be stayed by the most skillful local treatment. Here colotomy—or resection—would suggest itself as the only feasible recourse. It is doubtless extremely rare, however, for *simple* ulceration to assume such a phase.

Summarizing, the essential features of treatment in the average case may be tersely expressed: Rest in bed, liquid diet, divulsion of the sphincters, and general principles.

In conclusion, Mr. President, while I appreciate very keenly that this paper is far from complete, I feel that I have trespassed almost beyond pardon upon your time and patience. In excuse I have only to plead the special interest the subject bears for me and my conviction that it has not received from the profession that consideration commensurate with its due. If the language employed has at times seemed too vigorous, I beg that you will attribute it to earnestness rather than impertinence. And even though censure awaits me at your hands, I shall find compensation in the pleasure it has given me to meet again with my old friends and co-laborers in this favored section of "God's Country."

164 N. Cherry Street.

RICHARDSON, MAURICE H., BOSTON: MALIGNANT ADENOMA OF RECTUM. (*Boston Medical and Surgical Journal.*)

Hopeless recurrence of cancer of the rectum after operations, even though extensive, makes an operator undertake them with reluctance. In the less malignant types which are slow to invade remote structures extensive removal is justifiable.

Thorough cure follows extirpation of the rectum in malignant adenoma, and if recurrence takes place it is localized and the progress slow. Clinical experience gives a more hopeful prognosis in so-called malignant adenoma than in ordinary cancer.

One case of adenoma was reported—a man, forty-seven years of age—which pursued a favorable course. Without apparent cause he had experienced an excessive hemorrhage from the rectum about two months previously, accompanied by attacks of faintness. This was followed one month later by a similar hemorrhage.

For four or five years he had had a constant diarrhea accompanied by pain. An ulcerated tumor was found on the posterior wall of the rectum, about two inches above the anus. The mass had been curetted and burned several months before it was thoroughly removed through the dilated anus. Microscopical examination proved it to be a malignant adenoma. A hopeful prognosis was given, and four years later he reported as being perfectly well.

Gastro-Intestinal Disease.

POST-OPERATIVE DEATH: SHOCK, HEMORRHAGE, SEPSIS.

BY JAMES B. BULLITT, M. D.,
LOUISVILLE, KY.

Death which follows operation is usually attributable to one of these three causes: to shock, hemorrhage, or sepsis. There not infrequently is considerable divergence of opinion even among experienced and competent observers as to which one of these factors was the main one in the production of the calamity.

Shock is the sudden and more or less profound depression of the vital powers which comes on after the receipt of an injury. Experimental physiology has demonstrated that in shock there is reflex paralysis of the heart and of the abdominal vessels through the medium of the vaso-motor system. In the words of Mansell Moullin, "Shock is an example of reflex paralysis in the strictest and narrowest sense of the term, a reflex inhibition, probably in the majority of cases, affecting all the functions of the nervous system, and not limited to the heart and vessels only."

There would seem to be two factors in the production, one conscious and emotional, the other unconscious and physical. The sudden fainting from fright is an example of the first kind. It may be based on the belief of injury, recovery rapidly ensuing when the demonstration is made that no injury has been sustained; or it may be purely emotional, no actual injury being fancied. The following instance was recently related to me: Several gentlemen were on a fishing trip in the Northwest; one, a physician, a large, strong man, had a mortal dread of rattlesnakes, but was assured there were none thereabouts. One of his companions came suddenly upon him, and found him poking with his fishing-rod at what he believed to be a harmless reptile. The companion ejaculated, "rattlesnake!" and the doctor dropped, as though shot, in complete collapse. He had to be

dragged away, and on returning to consciousness was so prostrated as to be unable to walk. Shock here, purely emotional in origin, was of exactly the type seen as a sequence of grave physical injuries. The semi-centennial of the discovery of the use of ether has recently brought forth reminiscences of the pre-anesthetic days. Those who witnessed and practiced surgical operations before 1846 bear witness to the fact that shock for similar operations was much greater then than now. The precedent fear of the knife, the agonized suffering during the operation, and the subsequent horrible and fearful recollection all combined, together with the physical shock, to produce a state of extreme depression. Indeed, the emotions are so powerful in their physical expressions that even death can result from pictured and imaginary injuries. Lauder Brunton relates the case of a janitor who was subjected to a mock execution by medical students; he was blindfolded, made to kneel over the block, and his neck was struck a sharp blow with a wet towel. When his face was exposed, to their horror, he was found to be dead. Morrow relates something similar of some of the Hawaiians. When they are indisposed they send for the medicine-man, who with incantations, charms, and spells works a speedy cure. But sometimes the dance miscarries, and the sufferer is then assured he can not recover, but must die. He meekly sits down with his back to a tree, draws up his knees, clasps his arms around them, droops down his head, and actually dies. This is related on good authority; evidently it is shock through the medium of the emotions.

Conscious pain, severe and long continued, produces physical reaction in the form of shock.

Severe neuralgias, intestinal, biliary, and renal colic can produce serious collapse. Anesthesia abolishes to a large extent the shock from emotional causes, and hence the after-occurring shock of operation is apt to be much less now than in the pre-anesthetic period. Right here the practical question presents itself, Is more shock sustained in partial or complete anesthesia? The question can be better answered when we have proceeded further with our considerations. All operators are aware that ordinarily the emotional, fearful patients do not do so well after operation as the fearless, confident, and determined.

I believe the shock resulting from a surgical operation performed under an anesthetic is, to some extent, the result of unconscious pain; by this apparent paradox I mean pain that reflexly produces shock, yet of which the patient remembers nothing. Because there exists no memory of pain is absolutely no proof that pain was not recognized by the organism; and the resulting shock is to my mind proof to some extent that the inflicted pain is so recognized. The anesthetist often sees the expression of suffering and agony on the face, though after-questioning elicits no recollection of any suffering. I do not mean to say that recognition of pain, conscious or unconscious, on the part of the organism is the sole cause of shock. The mechanical injury to the tissues, the loss of blood, and the constitutional effect of the anesthetic all combine to produce the condition. The condition of shock is not a simple but a most composite one. Therefore it is very difficult to recognize surely the greatest factor in its production, the determining impression which leads to death. A case in point: A colored woman was operated on by my friend Dr. Vance for the removal of a large fibroid tumor of many years' standing. The woman's condition was very fair, though pressure symptoms had made themselves felt. The operation was without hitch or fault, ideal in point of execution and time; the Koeberle method of extraperitoneal fixation was practiced, practically no blood was lost, and the woman was put to bed with the confident feeling that at least she *should* get well. But she died within twenty-four hours, never having rallied from the shock. The sudden removal of the pressure which large tumors exercise on the great abdominal vessels very likely contributes in some, or even large part, to the production of collapse. Such patients bleed to death into their own vessels, so to say, and yet such a condition is not to be regarded as hemorrhage but as shock. The anesthetizing agent has much to do with the production of shock. Exhibition of an anesthetic even for trifling operations is sometimes followed by a profound depression, a depression by no means the result of the operation, but unquestionably brought about by the constitutional effect of the inhaled drug. Nitrous oxide produces insensibility by an essential asphyxiation, by a shutting off of oxygen. It seems probable that both chloroform and ether produce their respective

effects by the process of interference with the oxygen-carrying capacity of the blood, though the result is attained in a different way. Experiment has seemed to show that ether, when inhaled, has the property of causing the red-blood corpuscles to discharge their hemoglobin into the blood plasma; the oxygen-carrying power of the blood being thereby very much reduced, or rendered almost nothing, asphyxiation and partial paralysis of the cells of the organism take place, and anesthesia results. It is probable that chloroform acts in a somewhat similar way. In any event the violence done to the delicately sensitive nerve cells by the anesthetic is sometimes very considerable, and is properly to be classed under the condition of shock. The effect of the anesthetic does not cease with cessation of its administration. It is well recognized that ether can have a lastingly deleterious effect on kidneys already diseased; and indeed both chloroform and ether can excite cellular irritation which is recognizable in the kidney by rendering the latter permeable for albumin, and by the casts expelled from the uriniferous tubules. But is the recognizable damage done to the structure of the kidney the only damage done to the cellular elements of the body? Almost certainly it is not; and in proportion to the dose, to the length of time of administration of the anesthetic, and the profoundness of the narcosis, so the effect of contributing to the production of shock.

The exposure to cold of the patient's body and of the parts operated upon, more especially of the intestines, contributes to shock. The importance of the preservation of the body heat has prompted some operators to employ an operating-table with a hollow top, through which hot water is made to circulate during the operation, very beautifully sustaining the body temperature. One operator has found that in experimental operations on monkeys it is impossible to prevent death from ensuing unless this precaution for sustaining the body heat be taken. This point is important enough to demand more attention from operators than it receives. We find therefore that shock after operation depends not alone on the severity of the operative procedure itself, or the idiosyncrasy of the patient, but also on the time consumed in performance, the length and degree of anesthesia, exposure to cold, and last of all upon *hemorrhage.*

And now we are better prepared to consider the question of whether more shock is sustained in partial than in profound anesthesia. In one, shock is produced chiefly through emotional recognition and physical injury, the constitutional effect of the anesthetic being very small; in the other, shock is produced chiefly through physical injury and the constitutional effect of the anesthetic. Therefore we think it can be said that, by selecting cases properly, additional shock can be avoided sometimes by mild, sometimes by deep anesthesia.

Hemorrhage we propose to discuss independently of shock; for while hemorrhage contributes to the production of shock, yet all the essential phenomena of shock can occur quite independently of hemorrhage. Cases, therefore, in which death occurs as a sequel to either severe primary or secondary hemorrhage should rather be regarded as deaths from hemorrhage than from shock. The slow abstraction of blood, even when large quantities are lost, is comparatively well borne, as in the case of internal hemorrhoids, where, with every stool, a considerable quantity of blood may be lost. On the other hand, the sudden abstraction of comparatively small quantities will produce more profound effects. When considerable quantities of blood are lost during operation the organism suffers a twofold injury: not only is it deprived directly of so much necessary nutrient and oxygen-bearing material, but the blood pressure becomes much reduced, and at least one most important excretory function is interfered with, namely, the function of the kidney. The process of transfusion of saline solutions becomes a life-saving operation chiefly through its mechanical property of increasing the bulk of circulating medium, enabling the heart to keep the residue of blood circulating briskly, and, by keeping up arterial tension in the kidneys, encouraging a continued excretion. The maintenance of the kidney function is of the very greatest importance. Bouchard estimates that in two days and four hours man produces toxic substances, ordinarily excreted by the kidneys, sufficient to cause his fatal intoxication. When vital activity is reduced the formation of these toxic substances is also reduced, as they are largely the result of metabolic tissue change, though some have origin in putrid fermentation in the intestine.

When vital activity is interfered with, as a result of the shock of operation and anesthesia, this production of toxic material suffers a reduction, but still remains high, as shown by the early fatal result in such cases as develop a complete suppression of urine. This question of urinary function is too little regarded in surgical operations. In many cases not even a perfunctory chemical analysis of the urine has been made before operating, and the anesthetist is without the benefit of this additional guide in the choice of the anesthetic. Further than this, if the patient does not do well after operation the urine is ordinarily subjected immediately to examination, and if tube casts and albumin are found the hasty conclusion is arrived at that the kidney lesion is the result of the anesthetic employed. It is a striking fact that in the long tabulated lists of Tait and Price no death that has occurred has been referred to the localized effect of the anesthetizing agent upon the kidney. Keith reports a case of death with suppression of urine following operation in which *post-mortem* examination showed one ureter had been included in a deep ligature.

Considering the loss of fluid from the body in every operation, by hemorrhage, by the copious perspiration during operation so frequently observed, and as a result of a systematic withholding of fluids for forty-eight hours following the serious abdominal operations, it would seem wise to attempt supersaturation of the tissues with water before operation. In case of considerable loss of blood during operation, intravenous or intracellular injection of saline solutions should be employed, and in any event it should be a routine practice to put the patient to bed with the bowel distended with a hot solution of salt, or with plain water. This has the twofold tendency of counteracting shock and furnishing a fluid which, being readily taken up from the large bowel, tends to relieve the suffering from excessive thirst without the danger of producing vomiting, and further tends to sustain arterial tension and so maintain general circulation, and more especially the function of the kidney.

Sepsis is the lurking danger, the one great factor that has made the difference between the old mortality and the new. And of all the sources of infection the hands of the operator are the most fertile. What avails the boiling of instruments, the steril-

ization of dressings, the refinement of the best of techniques, if a dirty finger, with infection lurking beneath the finger-nail, be ruthlessly thrust into the defenseless abdomen? Keith says: "It is, unfortunately, a melancholy story that since surgery began the most of the mischief was done by the surgeon himself. It was the willing and tender though *unclean* hand that carried the poison into the wound." Operators of large experience, whose abdominal sections run up into the hundreds, attain the best results, the lowest percentage of mortality, chiefly because of the lessened probability of sepsis occurring. The man who operates daily, with a regular and trained staff of assistants and nurses, who, being keenly alive to the danger of carrying infection on his own person and hands, becomes a master of the aseptic technique, must necessarily attain better results than he who operates only occasionally, and then with pick-up assistants and nurses. One point is very generally neglected, and that is, that liability to infection is in direct proportion to the exposure of parts and the violence done them during operation. Abbe, in describing his method of performing Alexander's operation, recommends that the fingers be kept out of the wound entirely, and that the isolated round ligaments be caught and handled by forceps.

Price, the prince of statisticians, says in doing an abdominal hysterectomy it is better, if possible, not to catch sight of the intestines at all. Yet how often do we see wounds pawed over by many hands, intestines carelessly exposed, chilled by the air, and congested by pressure. With the exposed mesentery of the frog under the lens of the microscope the initial process of inflammation can be observed. The irritation of exposure to the colder air is sufficient injury for such reaction. After such an injury, and the same thing applies to all parts that suffer the mechanical injury of much handling, infection occurs more easily than in parts whose natural resistance is conserved by protection from such insulting injuries. The researches of Dr. Roswell Park have shown that infecting organisms, especially the bacillus coli communis, can invade and infect areas whose vitality has been impaired by injury. Thus the colon bacillus, harmless enough under ordinary circumstances in its apparently natural home, the large intestine, under such circumstances has the

power of going through the intestinal wall and exciting violent and even fatal inflammation. This is probably true for still other undetermined bacteria. Further than this it must be remembered that infection through the lymph and blood channels can occur; that infectious organisms can circulate through the vessels of the body and yet produce no harmful results unless a *locus minoris resistentiæ* be found. This has been well demonstrated for the tubercle bacillus in dogs. Those subjected to joint trauma developed local tuberculous lesions; while those not subjected to such trauma escaped. It is conceivable that such infection could occur after the trauma of operation, and to my mind it is probable.

Many operators of experience, with a just contempt for the "unavoidable accidents" which in the mouth of some bring about the *exitus letœlis*, scout at this source of infection, regarding it as the loop-hole which an indirect and timid mind seeks to find as excuse for the faulty work of its own hands. Such gentlemen accuse always and only the local conditions and accidents, and yet they are compelled to admit that now and then a death occurs from infection, the local source of which eludes recognition entirely.

While under the term sepsis is properly understood only those conditions resulting from infection by pathogenic organisms, still we must consider there are other products, the result of vital function and of putrefactive changes in the alimentary canal, which are capable of producing similar toxic effects, and indeed of causing death.

Bouchard has made most valuable researches concerning the origin of these various toxic materials. The toxicity of urine has already been mentioned.

The hepatic secretion, the bile, is also poisonous, its toxicity depending chiefly on its coloring matter and on the biliary acids. The statement is made that under the microscope the biliary salts can be seen to break up and dissolve the blood globules. That the presence of bile pigment in the blood profoundly alters its constitution is attested by the tendency to bleed which is developed in those who have been long and profoundly jaundiced. Bouchard estimates that man forms in eight hours, in bile alone, enough poison to kill himself simply by his hepatic secretion.

That systemic poisoning from this source does not ordinarily occur is due to the fact that the coloring matter, the bilirubin, is generally precipitated suddenly in the intestine on contact with the acid chyme, which renders it insoluble and prevents its absorption. The biliary acids are also converted in the intestine into an insoluble substance, viz., dyslysin, which is no longer injurious. But these transformations are neither immediate nor constant, and even in a normal state of health a certain quantity of the toxic matter may be reabsorbed in the duodenum. But the liver again arrests these poisonous substances and restores them to the intestines, or transforms them into harmless matter.

Of intestinal origin are also two other classes of poisons, those of mineral nature, and derived from the ingesta, and those resulting from putrefactive action within the intestine.

That part of these which finds its way by absorption into the blood stream is taken care of by the kidney, and excreted. If secretion of the urine is suppressed, the intoxication which results is partly of this intestinal origin; Bouchard therefore proposes the term stercoremia, or copremia, instead of the term uremia.

We therefore see the importance of directing attention to the alimentary tract before undertaking operations; not only is it advisable to flush it out, but intestinal antisepsis should be practiced systematically. The necessity of eliminating all sources of intoxication possible before operation is emphasized by the fact that the urine, the secretion by means of which these toxic substances are mainly passed out of the body, is very much reduced in quantity for several days following abdominal section.

Penrose found an average total amount for the first twenty-four hours to be 13.4 oz.; for the second twenty-four hours 14.6 oz., and for the third twenty-four hours 19.6 oz.

Grieg Smith found for the first twenty-four hours 17.7 oz.; for the second twenty-four hours 23.9 oz.; for the third twenty-four hours 26.2 oz.; for the fifth twenty-four hours 27.7 oz. It was not until the eleventh day that the average reached 38 oz.

Of all deaths following abdominal section, about two per cent. are due to true intestinal obstruction caused by adhesive bands, adherence of intestine to stump, or to a denuded surface, by adherence of loops of intestines to one another, or by the inclusion of intestine in a ligature or suture.

Of the remaining deaths, all those not due to one of the causes already mentioned are the result of intestinal paresis produced by septic peritonitis, enteritis, or some allied functional condition which causes paralysis of the function of the bowel. The vomiting which comes on after operation and lasts from ten to twenty hours may be nothing more than the result of the anesthetic. But when it is present on the third or fourth day and continues we may conclude it indicates the septic condition already mentioned. In an ordinary case of traumatic ileus passage of gas on the second or third day is ordinarily followed by free evacuation on the third or fourth day. In true obstruction relief is not obtained at any time; there is constantly increasing distension with vomiting, and finally collapse. It must be further borne in mind that peritonitis of a most virulent type may exist without any elevation of temperature, and even with subnormal temperature.

We thus see the roads to death along which an operative patient travels are many, devious, and complicated. If he survive the dangers of the anesthetic, he may fall from the surgeon's finger-nail; and if he happily escape that, he has yet to be protected from himself, his own worst enemy.

In conclusion we desire only to point out that many accidents can be avoided by careful consideration and attention to the general condition before operation; to those means which will render the whole alimentary tract especially clean and sweet as possible. We are called upon to anesthetize many a patient whose mouth is reeking with bad odors, filth, and bacteria.

Many of the pneumonias which are laid to the door of ether alone are unquestionably caused by aspiration of such infectious material. And yet it is a rare thing for surgeons or nurses to direct special attention to the cleansing and preparation of this important locality.

220 W. Chestnut Street.

DYSENTERY.

BY T. H. GARVIN, M. D.,
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Dysentery is a specific febrile disease, characterized by considerable nervous prostration and inflammation of the solitary and tubular glands of the large intestines, sometimes ending in resolution but frequently terminating in ulceration, occasionally in more or less sloughing or gangrene, always accompanied by tormina and tenesmus, the latter being most marked when the disease is located in the rectum or lower end of the sigmoid flexure. Stools at first more or less feculent, later on yielding dysenteric product without much if any feculuce, such as blood, mucus, slime, and as in the sloughing or gangrene forms, like the washings from meat, and possessing a putrid or gangrenous odor. In almost all, if not in all, situations where malarious fevers abound, as in the vicinity of the swamps and sluggish rivers of tropical or sub-tropical countries, dysentery prevails in proportion to the intensity and prevalence of the fevers, when on the other hand, intermitting and remitting fevers have been extinguished by improved drainage and the conversion of marsh lands to cultivated lands. It becomes equally unknown in or near the Tropics, Great Britain, Canada, and the United States, and in many other parts of the world its diminution has proceeded with the decreement of the malarious fevers. There would therefore seem to be some intimate connection between the causation of intermitting and remitting fevers and dysentery.

All paroxysmal fevers interfere very materially with nutrition and the functions of all the digestive organs and with the proper nourishment and constitution of the blood. Violent congestion of all the abdominal viscera is one of the special conditions of all forms of ague; both liver and spleen are subject to both temporary and repeated engagement, and so are all the organs that minister to gastric and intestinal digestion, even when the malarious poisoning has not resulted in any form of the periodic fevers. It may so impair the nerve centers and muscular tone of the blood-vessels, thus disturbing the balance of the portal circulation and leading to more or less congestion. The con-

gestion is always the most embarrassing during digestion, thereby interfering with the appetite and the capacity for digesting and assimilating food. Its repeated and prolonged existence must deteriorate the quality and modify the quantity of such important secretions as the gastric juice, the bile, pancreatic juice, and those furnished by the various glands. Crude alimentary principles are thus assimilated from the intestinal tract.

The liver is especially liable to functional derangement from the stagnation and slowing of the portal circulation, and thus it happens that in dysentery hepatic impairment is almost an invariable accompaniment. Such being some of the abnormal conditions produced by the operation of malaria in its active or latent form upon the chylopoetic viscera, it is not surprising that under the prolonged strain certain portions of the alimentary mucous membrane should break down. Why the solitary glands of the large intestines should be the special seat of dysentery, while the corresponding glands of the small intestines should, with few exceptions, escape, it is in the present state of our knowledge impossible to say. The most that can be said is that the elementary structures of these glands take on morbid action through the operation upon them of a morbid material derived directly from their blood supply. That this poison exists in the blood may be inferred from the fact that constitutional disturbance invariably precedes and accompanies the early stages of acute dysentery. Unwholesome drinking-water is also one of the fertile causes of dysentery. Bad food of any kind that is indigestible may act as an exciting cause of dysentery. So, also, may impure air by preventing the proper aeration of the blood and by promoting the retention in the blood of inassimilable material light up the dysenteric inflammation of the solitary glands. The passage of acrid bile or any acrid secretion through the alimentary canal may be the exciting cause also of dysentery. Is dysentery a contagious disease? It was believed to be such by many of the older members of our profession, but the experienced of most of our modern writers think not. My own experience proves to my mind that it is not. That it can be communicated through drinking-water or through solid food contaminated by excrement from the patient that has not been properly disinfected is a fact, but be this as it may, all discharges should be horoughly disinfected as soon as passed from the patient.

Symptoms of dysentery are familiar to any one who has ever witnessed a case. The essential characteristics of dysentery are severe pains in the bowels, followed by frequent and bloody stools, defecation being accompanied by much straining and tenesmus; the tenesmus being the most characteristic. Watch a patient afflicted with dysentery at stool—he sits a long time straining; his features are distorted by the pain he suffers; the discharge from the bowels may be, often is, but scanty; still he sits. The strong desire to remain at stool, accompanied by griping and straining, is expressed in the word tenesmus. Scarcely can such patient at times be persuaded to leave the stool and return to bed until he or she feels so faint as to be unable to longer maintain the sitting position, and sometimes while at stool they faint. Straining and tenesmus are peculiar to dysentery; they do not belong to diarrhea. So, also, is the passage of blood and mucus, the feces being for the most part retained, or after a time passed in hard and small lumps. The acute form may occur without any premonitory symptoms at all; more commonly, though, it is preceded by such. General uneasiness, lassitude, impaired appetite, disagreeable sensations in the bowels, confined bowels or a loose condition, may or most generally does exist. These are the most frequent premonitory symptoms of the acute form of dysentery. These may have existed for from one to two or more days when a chill occurs. Sometimes the chill or rigor is the first indication of a beginning attack—to these succeed the febrile symptoms, heat of the skin and quickness of the pulse. There is much variety in respect to the degree of the general or constitutional disturbances which accompany the local affliction in dysentery. The disease may and often does run its course without any fever whatever. On the other hand, the constitutional disturbances may be severe and often are very profoundly so, assuming a typhoid character. In the simple variety of the disease there are at the commencement griping pains in the belly, those pains to which the name of tormina is generally applied (the first name used by Celsus). The tormina are felt in different parts of the belly, and, like the pains of colic, yield at one time to return again more severely than before. With the tormina there occur discharges, usually slight, from the bowels, and by these some relief from pain. To the tormina and

diarrhea succeeds the tenesmus, this term meaning the constant desire to go to stool and the reluctance to leave it, with very distressing feelings of bearing down and burning sensations in the rectum.

In every marked case of dysentery tenesmus is a marked and most distressing symptom; the discharge affords but little relief. The calls to stool vary much in different cases, from a few to as many as a hundred a day. In consequence of the very frequent evacuations, often in children and sometimes in the adult, we meet with prolapse of the rectum, which may give much trouble. The discharges from the bowels in dysentery are very peculiar and characteristic of the disease. At first they are usually feculent, but very soon become scanty in amount. They are then composed of mucus mixed with blood, and are sometimes nearly pure blood. When the inflammation has gone on to a certain stage we find the appearance of vitiated bile in the stools, and shreddy-looking portions of fibrin, or false membrane. The odor is quite peculiar and highly offensive. Not infrequently there is a sympathetic irritation of the bladder, and frequently difficulty in passing the urine. While the chief part of the pain is experienced during the movement of the bowels, it is not always so. Pain is almost always present, and is aggravated by pressure or movement of the body. Sometimes the pain and tenderness extend to the region of the stomach and down the right side, showing that the whole of the large intestine is implicated.

In mild cases there is but slight fever, but in the more decided cases of the disease the fever may run up very high, with a very quick and sometimes feeble pulse, with a scanty secretion of the urine and a coated tongue. In mild cases of dysentery there is no special implication of the nervous system; the pulse, though quickened, is full and strong, and neither nausea nor vomiting become troublesome; but in the dynamic form of dysentery, characterized by a frequent, small, and feeble pulse, pallor and coolness of the skin, and the occurrence of a cold, clammy moisture of the skin, and an anxious expression of the face, sunken eyes, a dry and glazed tongue, suppression of the voice, hiccough, delirium, and distended bowel, the discharges become very offensive and watery; they present the appearance of water

in which raw flesh has been washed. The disease may thus prove fatal in a few days, the patient going into a state of collapse, resembling a case of cholera very much. But cases of this kind are very rare, and are seldom met with except in some of the very severe epidemics, though I have myself met with two cases of the kind. The ordinary form of dysentery tends to a favorable termination in from five to twelve days, though the acute form may terminate in the chronic form, yet it seldom does so when properly treated.

Treatment. When called to treat a case of acute dysentery, the first thing to do is to put your patient to bed in a room that can be thoroughly ventilated, require perfect quiet, and have a nurse that you can depend upon.

The first medicine I give is a good dose of Rochelle salts. I like them better than the sulphate of magnesia or Crab Orchard salts; they have a more decided influence over the liver and gland secretion, and just as thoroughly move out the retained fecal matter. As soon as I get the bowels freely moved of a free and large watery action, I give, if an adult, a hypodermic of morphia, and have applied over the bowels a flannel of several thicknesses wrung out of water as hot as can be borne by the hands, rinsing in a dry towel and sprinkled with turpentine, and have it covered by silk oil-cloth or a dry cloth, and change it when cool. I then thoroughly irrigate the bowels with water, as hot as can be tolerated, containing listerine or boric acid. When the water is passed I give an enema of a small quantity of warm, thin starch water containing from twenty to twenty-five drops tincture opium and five grains acetate of lead, and repeat in from two to four hours. I have the bowels irrigated every three or six hours, as the case may demand. I use a small rectal rubber tube or a large Nelaton catheter. Have the water run in slowly. If the tube gives pain, as it often does, give, with a small Nelaton catheter attached to small penis syringe, from two to three drachms of a four per cent. cocaine solution five or ten minutes before the irrigation is given. I find but little trouble in carrying out this plan of treatment.

Internally I give quinine and salol combined: three grains quinine to two grains salol. I have tried the ipecac treatment in several cases, but have never gotten the results claimed for it.

The irrigation with the nitrate of silver I have never tried except in chronic cases, in which it gives good results. I use it in the strength of fifteen grains to the pint, and use from two to two and a half pints of the solution hot; introduced through the rectal tube or the soft catheter. I have my patient fed at regular intervals small quantity of liquid food; boiled milk, milk and lime water, a small quantity of meat soup at a time. Give them good, fresh water, but only a small quantity at a time. I find that by this treatment I have less trouble with dysentery than by any other method; that convalescence is brought about much sooner. I have followed this plan with several persons who are the subjects of repeated attacks of dysentery, who, under the plan of internal medication through the stomach, had to remain in bed three or four weeks and become greatly reduced with a lingering convalescence, and had them out in a week.

Buckler, Thomas H., Jr., Baltimore, Md.: Dilatation of the Stomach in Infants. (*American Medical Weekly.*)

Any thing which interferes with the exit of the digested or partly digested portion of the food to pass from the stomach, or any thing which produced atony or insufficient muscular action of the stomach, is a potent factor in producing dilatation of the stomach. Fermentation is the result of both of these causes, and this produces a distension, atony follows, and dilatation as a sequel. Partial closure of the pylorus may be present from spasm, from absorption of products of fermentation or from chronic swelling as a result of gastritis, or cicatricial from ingestion of a corroding substance.

The symptoms are essentially those of indigestion. Vomiting some time after eating and followed by great relief is one of the most prominent symptoms; the vomitus is sour-smelling and is in a condition of fermentation. Constipation and alternating diarrhea may be present, and emaciation and prostration follow as a rule.

In the treatment the drug which is recommended as the best is salicylate of bismuth, in connection with careful regulation of the hygienic surroundings and occasional lavage of the stomach.

Correspondence.

NEW YORK LETTER.

SURGICAL SOCIETY.

Gastro-enterostomy. Dr. Willy Meyer (March 10th) gave the history of five patients on whom he had performed gastro-enterostomy. The first, a man of forty years, had had poor health for the past three years, vomiting after each meal. Condition very weak. A growth, movable with respiration, could be made out. Operation (Woelfler's), January 4, 1897. Stomach wall one-third inch thick. Pylorus adherent to the lower border of the liver, necessitating a partial resection of the left lobe. The stomach reached to the symphyses pubes. Owing to the thickness of the abdominal wall the Murphy button could not be employed. The patient has since gained seventy pounds.

The second case, malignant disease of the stomach; man, forty-three years; last summer vomited blood; suffered great pain. Diagnosis at that time, ulcer of the stomach. He had lost fifty pounds. Vomits after meals; can take only fluid diet; much emaciation. Operation, February 5, 1897. The disease involved the anterior and posterior portion of the stomach, but was able to pull out the fundus so as to insert a number half Murphy button, suture being out of the question. Patient vomited for two days, but this subsided with lavage. Was out of bed on the sixth day, and gained ten pounds in nine days.

Case 3 was presented eight weeks ago, and has continued to improve. A second operation is proposed to loosen adhesions.

Case 4 was presented some weeks before; is now perfectly well, having gained thirty-seven pounds.

Case 5, a benign stricture at the pylorus, operated upon February 24, 1894. Murphy button passed twenty-first day; has gained seventy pounds.

The Murphy button is best adapted to benign cases.

Gastro-enterostomy should be resorted to at an earlier date, though it will do good as a palliative measure in advanced cases.

It can be performed under Schleich's infiltration method of anesthesia. When an early diagnosis is made, operate early and avoid the use of the Murphy button.

The advantages of the Murphy button are, (1) rapidity, sixteen minutes; (2) can feed by the mouth at once; (3) the opening does not contract; and (4) the small space in which it can be used. Lembert suture must be employed as a safeguard, owing to the great tension. The one drawback is it may fall into the stomach. The button usually passes in from eight to eighteen days. Von Haller's posterior operation favors its passage.

The results of suturing by Dr. Briddon had not been satisfactory. This had been reversed since using the button of Murphy, which permits of rapid work. The suturing is very tedious. With Murphy's button, less contraction, and in one case autopsy showed a mere line. Early recognition, better result. Even if the operation gives but a short respite, it ought to be done.

Dr. R. Weir fights shy of the button, and considers the dropping back into the stomach a serious disadvantage.

Dr. Abbe believes that Murphy's button has a limited use in intestinal surgery. Mishaps are due to sloughing from direct weight.

Dr. Kammerer has had poor results from the use of the button. The double row of sutures gave perfect results. The greatest difficulty he finds is in applying the stomach end of the button. Time gained is a great factor, but little gain by the use of the button.

Dr. Hotchkiss examined two cases; one died a few weeks later and the other six months after operation from starvation, the anastomotic opening having contracted very markedly.

Dr. Curtis has had seven cases, two in which he used the Murphy button; five by suture. Of these three died. One case where button was used did well for a week, then vomiting, fecal odor, and peritonitis. The button was found in place, the opening being too small for it to pass. Second case, an old man, in poor condition; did well up to thirty-six hours, when fecal vomiting set in; by lavage grape skins were washed out of the stomach. Union perfect. Dr. Curtis does not believe that the button will always save time; it may take ten to fifteen minutes, while the suture can be done in from twenty-five to thirty-five minutes.

Dr. W. Meyer in closing said that the right spot for the union, the posterior part of the duodenum, is often difficult to get at, owing to dense adhesions. He has not seen bilious regurgitation in any of eleven cases. If vomiting is troublesome, lavage followed by salts has acted on the bowels and given relief. The button in the stomach does no real harm. Death results from shock; but this may be prevented in a large measure by injections of from 500 to 800 c.c. saline solution, given every few minutes. The contraction of the hernia of the opening must be unique, as this does not take place if function is maintained.

New Incision for Appendicitis. Dr. Kammerer (March 24th) in two cases has resorted to the following incision in opening the abdomen for removal of the appendix. Incise the skin down to the external layer of the sheath of the rectus abdominis; divide the sheath at the outer semilunar line; grasp and retract toward the median line; dissect the muscle from its posterior sheath back about one inch, exposing the artery and ilio-gastric nerve. This opening afforded easy access to the cecal region in one case of acute perforation of a gangrenous appendix and the other with a gray patch. By this means the fibrous layers are not placed directly opposite one another; the muscle falls back into its normal position; no atrophy results, as we avoid severing the nerve. The sheath was sutured with catgut. It may not permit hernia. Much easier than McBurney's blunt dissection. Dr. Kammerer would not advise its use where drainage of a pus collection was anticipated.

Dr. Weir would commend this procedure, though he considers McBurney's method the ideal plan. He doubted whether it would be possible to reach the outer side of the cecum.

Dr. Coley called attention to the frequency of hernia following healing by granulation. Since April, 1895, fifty cases have applied to the Hospital for Ruptured and Crippled.

Dr. Abbe has used McBurney's method very satisfactorily in suppurating cases; the muscular layers come together and close spontaneously when the drain is removed.

Dr. Meyer has used McBurney's incision in seventeen non-suppurating cases. He extends the incision vertically along the rectus when a longer opening is needed.

Dr. Kammerer, closing the discussion, said that it is easy to

get at any appendix wherever located through the incision he proposes.

General Septic Peritonitis. Dr. A. J. McCosh read the paper of the evening, relating his conclusions derived from personal experience in the treatment of these cases, viz., diffuse or general septic or suppurative peritonitis, when the infection, unlimited by adhesions, has extended to all parts of the peritoneal cavity.

Medical treatment in these cases is out of the question, and deprives the patient of the slight remaining chance for recovery. From 1888 to 1895, inclusive, he has operated in forty-three cases; thirty-seven died and six recovered, a mortality of eighty-six per cent. Free incision and irrigation with various fluids was employed in nearly all cases. The general plan, modified in details, was as follows: (1) chloroform; (2) free incision of five to six inches, the purulent fluid being allowed to run out from the side; (3) the intestines turned out, covered with hot towels, in order to complete the thorough washing out of the abdominal cavity; where distension prevented the return of the intestines the ileum was opened and gas and feces allowed to escape; (4) the offending organ was removed; (5) thorough washing of the intestines and cavity with several liters of hot (110–114° F.) normal salt solution; little shock follows the irrigation; on the contrary, the heart action is stimulated by the heat; a considerable amount of the salt solution is allowed to remain in the abdominal cavity for the purpose of both stimulating the heart and of favoring intestinal drainage; (6) sulphate of magnesia is injected through a hollow needle attached to a large aspirating syringe into the small intestine, as high up on the jejunum or ileum as possible; one or two ounces of a saturated solution is used; the needle puncture is closed by a Lembert suture; (7) several gauze strips are introduced in various directions among the intestines for drainage; (8) the abdominal wound is but partially closed by sutures, as affording the best drainage; (9) on retiring to bed ten grains of calomel are given, and is generally retained when chloroform has been used. Rectal stimulation is employed for twenty-four to thirty-six hours. Success depends on thorough irrigation and restoration of intestinal peristalsis.

Dr. R. F. Weir, discussing the foregoing paper, said that out of twenty cases of a similar nature he had not met with one suc-

cess. He was glad that the success of Dr. McCosh presented the subject from a more encouraging standpoint.

Dr. Abbe had had six or seven cases, but prefers ice to control the infection and lower the active development of bacteria and give the patient a chance to recover. He has used the intra-intestinal injection in two cases, but they did not recover. The shock from washing out and eventration is a decided factor against recovery. Two cases in which he used the antitoxin serum recovered.

Dr. Kammerer was successful in one case in which he had resorted to very thorough irrigation.

Dr. Van Arsdale reported thirteen cases of general septic peritonitis; nine recovered, three died. Two treated by antitoxin serum, both lived.

Strictures of the Appendix. Dr. Abbe showed several specimens illustrating strictures of the appendix. In opening the fresh appendix these strictures are not made out; and Dr. Abbe has resorted to injections of the appendix with alcohol, and ligation of the open end. In twenty-four hours, when the appendix is laid open, the strictures are brought out very distinctly, and emphasize the importance of removing these so-called appendices.

Strangulation Through a Hole in the Mesentery. Dr. Lilienthal (May 12th) exhibited a specimen of congenital hole in the mesentery through which internal strangulation had occurred. The diagnosis during life is very rare. There was intestinal obstruction for five days, with fecal vomiting. The hole reached from the insertion of the mesentery at the colon almost to the gut; it was perfectly smooth and inclosed two coils, involving several feet of small intestine.

Effects of Chloroform on the Kidneys. Dr. Dawbarn agreed with Dr. Weir, who found chloroform more irritating to the kidneys than ether; and the chairman, Dr. Hartley, is more afraid of the shock from chloroform than ether, and considers the former as irritating to the kidneys as the latter. Dr. Lilienthal had a case of appendicitis in which he used chloroform followed by acute suppression of urine and death. Both kidneys were diseased, though urine had shown nothing previous to operation.

Fabricius' Operation for Femoral Hernia. Dr. Willy Meyer (April 12th) presented a woman on whom he had operated by the method of Fabricius, November, 1896, for femoral hernia on the right side. There also coexists femoral hernia on the left side. Dr. Meyer has performed this operation three times: one in 1894, the above named case in 1896, and the third one week ago. No recurrence has taken place.

Tubercular Peritonitis. Dr. A. L. Fisk (March 8th) showed a patient who had been well up to April, 1896. From that time there had been a gradual increase in the size of the abdomen, with pain, with loss of flesh and strength; temperature 103° F.

Operation, December 14, 1896. Median incision; peritoneum found thickly studded with tubercles; intestinal coils bound together and adherent to abdominal wall; the cavity contained some fluid. The abdominal wound was only partially closed, and drained with iodoform gauze. The gut was very friable. A sinus opened one week ago in the suture line and a suture came away. There has been a marked improvement in health and strength.

Eucaine in Strangulated Inguinal Hernia. Dr. Howard Lilienthal (March 8th) reported the history of a man of fifty-five years, with valvular cardiac disease and arterial atheroma, on whom he had operated for strangulated inguinal hernia, using a fifteen-per-cent. eucaine solution as an anesthetic, with morphine hypodermatically. The patient smoked a cigar during the operation. Six ounces of the omentum was cut away and the wound closed by Bassini's method. The patient left the hospital in two weeks.

Dr. Erdman had operated upon three cases of a similar nature with cocaine.

The chairman, Dr. Van Arsdale, saw the operation by Dr. Lilienthal, and was very much pleased at the excellent result.

Strangulated Hernia in a Child of Four Months. Dr. C. N. Dowd reported a successful case of operation for oblique inguinal hernia on a child of four months. There was no shock, the pulse was good, and the ether well borne; little reaction. Temperature, per rectum, next day, 101° F. The abdomen is now firm and solid. These cases are rare, but one in thirty-eight thousand children. Of one thousand four hundred and four cases strangulated hernia, only thirteen were under four years, or one in one

hundred and eight. Taxis should be made but once, and that very gently, in a hot bath. One case of three months taxis did well for eleven days; inflammation reappeared, perforation, artificial anus, and death. After taxis the hernia is likely to return. Operation presents but little danger; strangulation, great danger. Children under four months well adapted to operation. In thirteen cases under one year, reported since 1894, all recovered.

Divide the constriction and close by the Bassini method, will give a certain radical cure. Ether better than chloroform. Children endure it better than adults.

Artificial Anus in Children Fatal. Dr. B. F. Curtis had a case in a child of four weeks which had been strangulated twenty-four hours, and child in a state of collapse. Hot towels were applied to the gut, but no change in color resulting, the gut was not returned. Vomiting ceased. Next morning intestine was of normal color, except one spot, showing death of the outer covering. The bowels moved several times, but the patient died of peritonitis.

Antistreptococcus Serum in Septicemia. Dr. Lilienthal reported a case of excision of the knee, followed by septicemia, with no infection or pus in the wound or bone marrow, which recovered under use of the streptococcus serum.

Antistreptococcus Serum in Six Cases. Dr. R. F. Weir read a paper giving a resumé of the introduction and application of the antistreptococcus serum, the results obtained by Marmorek, in 1895, in five cases of virulent erysipelas, which recovered under the use of the serum.

Case 1. Ilio-lumbar abscess, mixed infection, tubercle bacilli, streptococcus, and staphylococci. Serum used on fifth day, and counter-opening to afford freer drainage. The improvement which followed was attributed to the latter measures.

Case 2. Chronic suppurative coxitis, with secondary involvement of knee. Previous to December, 1896, when operation was performed, only tubercle bacilli were found in the serum, but after operation staphylococci were very numerous. The serum made no apparent impression on the cause of the trouble, and the thigh was amputated in January.

Case 3. Carcinoma of breast, removed by Halsted method, followed by septic infection, upon which the serum had no effect. Death.

Case 4. Compound fracture thigh, involvement knee-joint, suppuration; injection of serum, followed by death.

Case 5. Purulent appendicitis, pus pretty generally distributed throughout the abdominal viscera, but serum injections had no appreciable effect on the cause of the trouble.

Case 6. General suppurative peritonitis from perforating appendicitis; no adhesions, thorough flushing; iodoform gauze drainage, serum injections, following which pulse fell to sixty; patient died on the fifth day after operation.

The early reports from Germany were against the use of serum, but Aronson believed this to be due to loss of virtue from old age. Marmorek and Baginski had reported ninety-six cases of scarlet fever with freedom from complication; the death-rate being 22 to to 24 per cent. without serum, 14 per cent. when serum had been used. Dr. Weir believes that Marmorek's serum is of value in erysipelas, perhaps in scarlatina; non-proven in puerperal sepsis, and deserves further trial. The dose used varied from two to ten cubic centimeters. It was carried in one case, during twenty-four hours, to one hundred and sixty centimeters.

Dr. H. Lilienthal believed the dose could be graded more accurately by antitoxin units than by volume. He looks upon the result secured in the eight cases in which he has used the serum as very encouraging.

The chairman, Dr. Van Arsdale, reported two cases in which he had used the serum. One, a girl of fifteen years, with temperature 103° F., pulse 140 on admission to the hospital. She had had several attacks of mild appendicitis. There was found a large abscess in the right iliac fossa, and pus throughout the abdominal cavity. Saline irrigations *in the erect posture* to facilitate the exit of the fluid. Four hours later 6 c.c. of antistreptococcus serum were injected in the lumbar region, and the next day 7 c.c. more. The bowels moved twenty-four hours later.

Gangrenous Gall-Bladder. The second case, woman thirty-seven years, with general peritonitis from a gangrenous gall-bladder. Four hours after operation temperature rose to 103° F. Urine negative. Twenty-four ounces saline solution were injected in the right basilic vein; nine c.c. serum in the lumbar region, and three pints saline solution per rectum. Temperature 102° F. During the next twenty-two hours two injections of eight c.c., and

four injections the next day. On the fifth day the temperature fell to 101° F., and she gradually improved. Later a gall-stone was removed.

Stab Wound in Abdomen. Dr. P. R. Bolton (May 10th) presented a man of twenty-six years, who was admitted to the Presbyterian Hospital a few hours after having been stabbed in the abdomen, the cut extending from above Poupart's ligament four inches upward. The intestines were smeared with feces; the mesentery and sigmoid flexure were perforated. The abdomen was thoroughly flushed with salt solution, then wiped dry; the intestines withdrawn, and the cavity well washed out, dried, the sigmoid flexure sutured, and the omentum stretched over the suture line.

Dr. Van Arsdale considered the saline irrigation as appropriate to cases with the escape of feces into the general peritoneal cavity.

GENITO-URINARY SECTION.

Recto-Urethral Fistula. Dr. Eugene Fuller described (March 9th) a new operative procedure for the cure of this stubborn condition, similar to that described by Dr. Fuller in the last number of MATHEWS' QUARTERLY, with the additional feature that he twisted the rectum on its longitudinal axis in order to avoid bringing the suture lines opposite each other. He reported a successful case on which repeated attempts by other methods had failed.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Septic Peritonitis and Antistreptococcus Serum. In a paper read by Dr. E. H. Grandin (March 25th) a resumé of nine cases of general peritonitis and thirty-one of local peritonitis was given. Of the former eight died, and one, with the use of the serum and multiple incisions for free drainage, survived. In this case there had been four days' indigestion, with slight abdominal swelling and tenderness; temperature 100° F., pulse 90. Diagnosis, perforative appendicitis. Incision in right iliac region showed perforation of a gangrenous appendix; later, dullness over umbilicus; second incision on the left showed pus pockets; drained with strips of gauze. Twelve and one half cubic centimeters of serum given, and later twenty-five

c.c., followed by marked increase of urine to one hundred ounces. Charcoal dressing applied. Tubes removed at end of fourteen days, flaps closed by silk-worm gut sutures.

The pus was not examined, but a mixed infection was evident. After serum injection pulse and temperature fell, and the flaps cleaned up. The author believes the serum does no harm; may do good.

Dr. Johnson, of Boston, in the discussion, said that on last Thursday he had operated for pyosalpinx; adhesions necessitated a very slow separation, and the infusion of saline solution on the table. Twenty-eight hours later there were evidences of a septic pleuro-pneumonia on the left side. Two grams of the serum were administered Saturday and three grams on Sunday. Vomiting and constipation yielded to salines administered by the mouth. Distension disappeared and the patient was able to take nourishment. Considerable fluid was drawn off from the pleural cavity, and the patient is improving.

Dr. Gerster considers small doses better than large ones. The antiseptics used to preserve the serum are a source of danger; by the use of an aseptic serum this may be avoided.

Dr. Coe believes that vigorous, early surgical treatment, with a second opening, will result in more frequent recoveries. In suppurative appendicitis the median incision with flushing and drainage through the abdominal wall and vagina will give better results.

Dr. A. L. Fiske said that Dr. Abbe prefers to wipe out all pus collections with gauze, agreeing with Dr. Weir that flushing the abdominal cavity spreads the infection and converts a local infection into a general one or multiple pocketing of the pus among the intestines.

Dr. Murray believes that the serum must be used before the case becomes desperate. In no case of general diffuse suppurative peritonitis had he succeeded in saving the patient by operation.

Dr. Dudley considers these cases as of a desperate nature and requiring desperate treatment. Many cases of the worst and most fatal kind show little pus, but the intestines are covered by lymph and a little dirty-brown fluid. In the cases reported there was "laudable pus," and he believed that they were cured in spite of the serum.

The chairman, Dr. Marx, referred to five cases of puerperal peritonitis which had all died. Fifty cubic centimeters of serum may be given in a few hours without harm.

Dr. Grandin, in closing, said he had lost all his cases but the one in which the streptococcus serum had been used. This was a case of general peritonitis, low temperature and low pulse, with the appendix floating free in the abdominal cavity, and abscesses in every direction. He prefers flushing to mopping.

A. Ernest Gallant, M. D.

MATHEWS' QUARTERLY JOURNAL

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JOSEPH M. MATHEWS, M. D., AND HENRY E. TULEY, M. D., EDITORS.

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"ANTI-VIVISECTION."

Of such vital importance to the future of medicine in this country is the anti-vivisection bill now before Congress, that we give this prominence to an editorial in *The Open Court,* from which the extracts below are made.

It is refreshing to see such words in condemnation of this iniquitous bill in a secular publication, and we trust that it may move many laymen to protest against the passage of this measure. The profession has been too lukewarm in their protestations against the bill, while the advocates of it have been quietly at work to insure its passage.

A speaker at one of the banquets held during the session of the American Medical Association said that there was a room reserved in hell for the medical profession, for it was a place paved with good resolutions, and the profession of this country had been doing nothing but resoluting ever since their attention was called to the anti-vivisection bill. Now is the time for action; resolutions will do no good. What is needed is personal appeals to the senators and members of Congress.

Compassion with the suffering is a virtue; indeed it is that virtue which in itself constitutes humaneness, and which, wherever absent, changes a man into a brute, a wild beast of prey. Let us, therefore, by all means foster this gentlest of all virtues, which is the main jewel in the crowns of the two greatest relig-

ious leaders of the world—Jesus the Nazarene, and Gautama the Shâkyamuni. But compassion should not be allowed to grow rank. Compassion is a sentiment; and he who yields to sentiments, without subjecting their exercise to criticism and discrimination, ceases to be a man of moral responsibility and degenerates into a creature of instinct. Compassion as a blind instinct is unquestionably a nobler fault than wrath, but as a passion it is a fault, it is sentimentalism, and its influence can become the more baneful the less its deficiencies are anticipated. Thus an untruth in the mouth of the erring, who honestly believe it to be a truth, may be more dangerous than an ethical falsehood pronounced by a liar.

The anti-vivisection movement, as it is carried on, is in this sense guilty of immorality, and we deem it our duty to state our views of the subject openly and frankly. We do not doubt that the anti-vivisectionists are noble men and women ensouled with the noblest of all virtues, compassion for the suffering, but they lack upon the whole the most essential of all virtues, which is thought, discrimination, discretion, consideration of consequences, a surveying of the situation and a weighing of the implications of the question as well as the results to which it leads.

We ought to bear in mind that the moral man should never yield without previous deliberation to a sentiment or passion of any kind, not even to the gentlest and noblest, such as charity, compassion, love. Be full of charity, compassion, and love, but do not yield at once to every gentle emotion of your heart, for your charity may be misplaced and your love may do more harm than good.

A noble zeal for truth was the original motive that begot the Inquisition; and a genuinely charitable spirit has pampered pauperism in Italy and other good Christian countries.

Therefore we must beware of yielding to sentiments, for every kind of yielding to sentiment is self-indulgence and will be productive of good by haphazard only in the same way that an animal may perform a moral deed if his disposition at a certain moment happens to be excited in the right way.

The anti-vivisection movement we can not help regarding as such thoughtless yielding to sentiment. The sentiment is noble and evinces a gentle disposition of the heart, but whether it is moral, whether it is right, whether it leads mankind upward is another question; and it appears to us that it can not stand a careful weighing of all the *pros* and *cons*. Before the tribunal of ethics it stands condemned as much as all those other sentimental aspirations, indiscriminate alms-giving, the burning of the bodies of heretics for the sake of saving their souls, and showing mercy to the tiger because he ought to have a chance of reforming, and might learn to eat cabbage and grass like a lamb.

We all know that vivisection is not a pleasant duty of the physiologist, but it is an indispensable task that must be done for the sake of investigation. It falls within the same category with all sacrifices. Should science neglect to search for light in this most important domain, the domain of life, its representatives would be guilty of a gross neglect of duty. They would be like generals who would retreat before the enemy because the enemy's bullets endanger the lives of their soldiers. They would be like an officer in the fire department who, inspired by the idea of not causing pain to anybody, would recall his men from the burning building when they ought to rescue its inmates, because the firemen might blister their hands.

Vivisection may truly have, and frequently will have, the tendency of blunting the sentiments of the vivisector; but so does dissection. Shall we surrender dissection as an obligatory part of medical instruction lest the moral sense of the student be shocked? There are a few quack schools of medicine in this country which undertake to educate physicians, but their degrees should not be recognized, for they leave their graduates ignorant on one, perhaps on several, most important subjects. It is true enough that the human body in its wretched nakedness is subjected on the dissection-table to most undignified treatment, which is liable to make the student vulgar and rude; but for that reason we can not abandon dissection. The right thing to do is to teach the student the moral aspect of dissection and put him

on his guard against the demoralizing influence of the dissection-table. Do not cut him off from one of the best sources of information, but strengthen his moral nerve that he can bear the view of the Medusa without having his heart petrified by the sight of her terribly ugly features.

The anti-vivisection movement might be excusable if there were any valid arguments to prove that vivisection is useless. But the very opposite is the case. Innumerable discoveries of the most beneficent kind have been made through experiments on animals.

An anti-vivisectionist writes that he would rather die than purchase the prolongation of his life with the sacrifice of an innocent animal. That sentiment seems noble and generous. But should we not be ready to kill a million rabbits if we can thereby save the life of one child attacked with diphtheria? Now the question is not one child against a million rabbits, but many millions of children of all the generations to come against a few hundred rabbits; and consider that not man alone but the whole animal creation, too, is the gainer by every progress of science.

It is not our intention to enter here into a detailed discussion of the anti-vivisection movement, but suffice it to say that many publications of the anti-vivisectionists are guilty of gross exaggerations as to the number of the victims of vivisection and the cruelties to which the dissected animals are exposed. The truth is that all the great scientists, who are famous as clever vivisectors, are as considerate as possible and avoid all unnecessary suffering. It is, of course, not exactly impossible that there are among the minor lights of science men ruthless enough to delight in the cruelty of their work, but it is very improbable. I believe that it is painful to vivisectors to be reminded of the fact that their subject is a living being; but whenever they think of it, they can not help being touched by a sentiment of compassion.

Every compassion is a pain. While the anti-vivisectionist weakly indulges in his sentiment and thoughtlessly yields to the

impulse of removing it, the investigator knows that the victim is sacrificed for a great purpose, and he can say to the rabbit on the table before him: "Blessed art thou, poor creature; thou art distinguished among thy comrades, and glorious is the destiny for which thou hast been chosen. While most other animals die of direful diseases, frequently under terrible pains, thou shalt give thy life for science; for the sake of revealing the mysteries of existence, and for the purpose of giving us instruction as to how some of the ills that flesh is heir to may be cured. Blessed art thou; for thy death helps to build up life, and the preservation of lives of many noble men and women will in part be due to thee. In them and with them thou wilt gain an immortality of a noble kind, which in the same way is otherwise not granted to the brute creation."

There is a great field for the humane societies, and they can do a noble work by elevating mankind and refining its sentiments, and also by protecting the dumb creation against the cruelty of savage masters. We are with them in all these worthy endeavors with heart and soul. In addition they may set their face against any kind of vivisection performed by those not called upon; but when they begin to meddle with science and forbid the physiologist to investigate life in the living animal, then it is time to pronounce the *quousque*.

Vivisection, *if strictly kept within the limits of its important purpose,* is a moral obligation; and he who would hinder the physiologist in the performance of his duties makes himself guilty of immoral conduct; but any cruelty to animals, viz., every lack of respect for life, every thoughtless or willful infliction of pain, every delight taken in torturing, injuring, or destroying sentient beings, is a crime that should be denounced and reprimanded and, if necessary, checked by the power of law.

THE AMERICAN MEDICAL ASSOCIATION.

The meeting of the American Medical Association at Philadelphia was the banner meeting of the half century. In numbers it exceeded every other meeting, and in *tout ensemble* equal to any body of men that ever assembled.

The work done in the Sections was of a very high order, the papers being nearly universally of decided merit and of scientific value. The entertainments provided for by the able and efficient Committee of Arrangements were not only numerous but exceedingly entertaining. And the President of the United States was there, and he never had a more distinguished audience to address. And, too, Governor Hastings was there, may we never forget it, for his scathing rebuke to quackery and charlatanism found echo in every beating heart before him. And Doctor N. S. Davis was there, the father of the Association. May his days on earth be extended beyond the century mark, and may they be peaceful and happy ones. The Association could not have selected a better man to preside at the next meeting than Doctor Sternberg. Although of the army he is also of the people, and his allegiance to the medical profession is never forgot. He has an international reputation as a writer, is an easy and graceful presiding officer, and a President of whom we can be proud. Dr. Joseph M. Mathews was elected First Vice-President. The Association still lives; long may it live.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

On the evening of June 3d, at Philadelphia, the following officers and charter members of this Association were elected: President, Charles G. Stockton; First Vice-President, D. D. Stewart; Second Vice-President, Max Einhorn; Secretary and Treasurer, Chas. D. Aaron; Councillors: For three years, A. P. Buchman; for two years, J. C. Hemmeter; for one year,

Henry L. Elsner. Members: Chas. D. Aaron, Detroit; A. L. Benedict, Buffalo; Louis Brinton, Philadelphia; A. P. Buchman, Fort Wayne; Max Einhorn, New York; Henry L. Elsner, Syracuse; Julius Friedenwald, Baltimore; J. C. Hemmeter, Baltimore; A. A. Jones, Buffalo; J. Kaufman, New York; M. Manges, New York; Frank H. Murdoch, Pittsburgh; Chas. E. Simons, Philadelphia; D. D. Stewart, Philadelphia; Chas. G. Stockton, Buffalo; Thos. Hunt Stucky, Louisville; Henry E. Tuley, Louisville.

THE CONFEDERATION OF EXAMINING BOARDS.

The Confederation of Examining Boards held its annual meeting in Philadelphia the day before the American Medical Association convened. It is composed of some of the most distinguished men in America. Men of great renown as teachers, physicians of marked ability, and surgeons of great reputation were in attendance. The laity too was represented in the presence of members of the great universities. Good feeling prevailed throughout, and the college men were in evidence. A better understanding was brought about by the free discussion, and success is assured. It goes without saying that the able, genial, and distinguished Doctor Potter presided, and of course was again re-elected.

The forty-second annual session of the Kentucky State Medical Society, while not equal to former meetings in the point of attendance, was a greater success in the point of real work done. The Committee on Topics made excellent selections; and another point worthy of mention is the fact that all but three of those selected for the special essays on selected topics were present.

Dr. J. M. Mathews was elected President for the ensuing year, and Maysville was selected as the next place of meeting. With Dr. H. K. Adamson as Chairman of the Committee of Arrangements another successful meeting is assured.

Necrology.

The sudden and sad report of the death of Dr. William T. Lusk, coming so soon after the announcement of the death of Dr. J. Lewis Smith, is a double calamity which will bring distress to thousands of physicians in the United States, for few men have attained such prominence as Dr. Lusk and Dr. Smith, or were so universally well thought of.

Since 1869, with the advent of his renowned book on Diseases of Children, and for years before, on account of his teachings and writings, the latter especially upon the pathology of children's diseases, Dr. Smith's name has been a standard when an authority upon that branch of practice was mentioned. Dr. Lusk's prominence is hardly less noted, for his work is a standard text-book on Obstetrics in the majority of schools of this country, and has been translated into several languages.

The notices of their deaths, as published in the June 19th issue of the *Medical News*, are here reproduced in full:

Dr. William T. Lusk, of New York.

We regret to announce the sudden death from apoplexy of Dr. William T. Lusk at his home in New York on Saturday, June 12th. The news came with painful surprise to all his friends. He had been in his usual health up to the time of the attack, and was engaged in packing his satchel preparatory to spending Sunday with his family in the country when the summons came.

Dr. William Thompson Lusk was born in Norwich, Conn., May 23, 1838. He entered Yale College in 1859, but during his sophomore year he left to enlist in the army. Entering a New York regiment as a private, he displayed so much force of character that in three years he rose to be assistant adjutant-general. He then retired from the army, came to New York, entered upon the study of medicine, and was graduated from Bellevue Hospital Medical College in 1864. He immediately went abroad and spent four years in study at Edinburgh, Paris, Vienna, Prague, Heidelberg, and Berlin. He was Professor of Physiology in the Long Island Hospital Medical College

from 1868 to 1871, and lecturer on the same subject at Harvard Medical School in 1870–71. During these few years he gained the reputation of being a brilliant physiologist and a most interesting lecturer. In 1871 he was elected to the professorship of Obstetrics and Gynecology at Bellevue Hospital Medical College, which position he retained to the time of his death.

In entering upon this new field of labor Dr. Lusk threw all the energy of his enthusiastic nature into the study of obstetrics as his chosen life work. His reputation as a teacher and a master in this branch of medicine became world wide, and his text-book on the "Science and Art of Midwifery" was hailed as the best treatise on the subject that had ever been published. It has been translated into the French, Italian, and Spanish languages, and has recently been adopted as a text-book in the Medical School of London. The interesting style of the book, the clear exposition of the subject, and the rational and logical treatment therein set forth will signalize it as a classic for many generations.

Dr. Lusk was a pronounced conservative, indeed he was rather timid in his proving of new remedies and surgical procedures. In this respect he exerted a wholesome influence upon the profession, especially at times when waves of surgical epidemics threatened to obliterate all treatment save that by surgical means.

To those who knew him well Dr. Lusk was a man of warm impulses, of strong attachments, of a sweet spirit, and a lovable nature. To his patients he was not only the man of science, but the warm and sympathetic friend, whose coming was always welcome, and whose words of sympathy accomplished their object, for they were always genuine. His life was as open as a book. He always said what he felt and felt what he said. His words were devoid of diplomacy, and in his conduct finesse had no place.

Dr. Lusk leaves three daughters and two sons. The eldest son, Graham Lusk, is Professor of Physiology in Yale University. The younger son, Dr. W. C. Lusk, was associated with his father in his practice. He is Assistant Demonstrator of Anatomy in Bellevue Hospital Medical College, and Visiting Physician to the Workhouse and Almshouse on Blackwell's Island.

Dr. J. Lewis Smith, of New York.

Dr. J. Lewis Smith died suddenly of apoplexy in the seventieth year of his age at his home in New York, June 9th. He was born n Onondaga County, New York, October 15, 1827, his father being

the Hon. Lewis Smith, a direct descendant of John Smith, one of the founders of the New Haven Colony. His early education was obtained in the public schools, which at that time were of an inferior grade. He prepared for college at the Cortland Academy of Homer, New York, one of the foremost preparatory schools of the country, and entered an advanced class of Yale College, graduating in the same class with President Timothy Dwight. He began the study of medicine with Dr. Caleb Green, of Homer, N. Y., Professor of Materia Medica in the Geneva Medical College. He afterward became a student of the elder Austin Flint and Frank H. Hamilton, of Buffalo, and attended a course of lectures in the Buffalo Medical College. In 1851 he came to New York, and was graduated from the College of Physicians and Surgeons in 1853. He located in practice in the same year, and was appointed Curator to the Nursery and Child's Hospital in Lexington Avenue, where he made his first studies in the pathology of the diseases of children. In 1854 he determined to make the diseases of children his special field of investigation and practice.

His first publication was entitled "A Review of Epidemic Smallpox as it Prevailed in New York City at Different Periods During the Last Fifty Years," *New York Journal of Medicine*, July, 1854. He was also the author of the following contributions: "Report of a Case of Hydrophobia, with Statistical Observations," *New York Journal of Medicine*, September, 1855, and continued in the same journal for January, March, and May, 1856; "Remittent Fever in Children," *New York Journal of Medicine*, January, 1857; "On Infantile Pneumonia," *New York Journal of Medicine*, March, 1857; "Post-Mortem Appearances in Eleven Cases of Cholera Infantum," *New York Journal of Medicine*, July, 1857. From this time until his death he contributed upward of one hundred papers to the various medical periodicals on diseases of children. He also made large contributions to the following works: Ziemssen's "Cyclopedia of Practice of Medicine," Ashhurst's "International Encyclopedia of Surgery," Starr's "Diseases of Children," Keating's "Cyclopedia of Children's Diseases," Sajous' "Annual," Pepper's "System of Practice of Medicine," "Reference Hand-book," etc.

He held the following appointments: Curator to the Nursery and Child's Hospital, Physician to the Northwestern Dispensary, Visiting Physician to the New York Infant Asylum, Visiting Physician to the Charity Hospital, Visiting Physician to the Infant Asylum on Randall's Island, Visiting Physician to the New York Foundling Asylum, Consulting Physician to the Nursery and Child's Hospital, Second

President of the American Pediatric Society, Professor of Diseases of Children in Bellevue Hospital Medical College.

The first edition of his work on "Diseases of Children" appeared in 1869, and since that date eight editions have been published at intervals varying from two to four years.

RESOLUTIONS ON THE DEATH OF DR. J. LEWIS SMITH.

WHEREAS, The Medical Board of the New York Foundling Hospital has lost by death its oldest member, Dr. J. Lewis Smith, who for twenty-five years was Visiting Physician to the Institution; be it

Resolved, That it record this tribute to his memory: His fame and faithfulness were ever devoted to the interests of this institution.

Resolved, That this Board attend the funeral in a body; that a copy of these resolutions be spread upon the minutes and forwarded to the current medical periodicals, copies of the same being sent to the family of the deceased.

(Signed) JOHN J. REID, M. D., *President.*

June 11, 1897. W. P. NORTHRUP, M. D., *Secretary.*

With Our Exchanges.

DISEASES OF THE RECTUM.

Brayton, A. W., Indianapolis: Etiology of Stricture of the Rectum. (*Indiana Medical Journal.*)

Mathews' Quarterly of Rectal and Gastro-Intestinal Diseases, April, 1897, Vol. IV, No. 14, contains a seventeen-page article by the editor on the "Etiology of Stricture of the Rectum," read by invitation before the Medical Society of the State of New York, January 27, 1897, the larger part of which is devoted to a discussion and refutation of the criticisms of Dr. Mathews' views on the above topic made by Dr. Charles B. Kelsey, New York, in *Sajou's Annual* for 1892.

Dr. Mathews states that he did not respond earlier, as this was his first opportunity to meet a New York audience.

This article of Dr. Mathews is worth reading, not only by the rectal specialists, but by the general practitioner. It may be said in a general way that the study of rectal diseases alone is an extremely limited field of pathology, as it also is of practice. This is shown by the small caliber of the irregular "orificialists" who have taken up rectal diseases from the point of view of Pratt, of Chicago. The student and practitioner of rectal diseases, as of every other branch of minor surgery and restricted practice, must be first a mature, educated, and experienced physician, grasping the whole concept of the anatomy, physiology, and pathology.

This preparation no one denies to Dr. Kelsey—certainly not to Dr. Mathews—and hence the interest that is aroused when two such physicians discuss the causation of stricture of the rectum. Dr. Mathews not only defends his primary thesis ably, as laid down in his work on "Diseases of the Rectum, Anus, and Sigmoid Flexure," but in the white light of polemic discussion he brings to view the etiology of rectal stricture so that he that runs may read.

Dr. Kelsey takes issue with Dr. Mathews' statement that sixty per cent. of strictures of the rectum are due to syphilis.

Dr. Kelsey's analysis of one hundred and thirty-eight cases of rectal stricture in his personal practice shows the disease more common in males, seventy-six to sixty-two. Of the one hundred and thirty-eight cases, sixty-two, less than fifty per cent., were cancerous. Out of the remaining seventy-six only seventeen gave any decided evidence of being syphilitic or even "venereal," that is, chancroidal or gonorrheal.

Thirty-seven were classed as positively non-venereal, and eleven of "doubtful nature but not malignant." Dr. Kelsey also states that these figures do not include the congenital and spasmodic varieties, nor those due to pressure.

But in spite of these personal statistics of Dr. Kelsey's, which show a much less percentage of strictures from syphilis than Dr. Mathews' statistics, one rises from the study of this caustic but good-tempered article of Dr. Mathews with the conviction that Dr. Mathews' position is much nearer the right, and that he is justified, in the light of the authorities he quotes out of his own experience as the pioneer of rectal practice in the United States (at least Dr. Mathews has been following this practice for twenty years, and longer than any other specialist in the United States), in his general statement that fully sixty per cent. of the cases of stricture of the rectum are due to syphilis.

One can hardly fall in error where the scales are equally balanced as between a possible lupus and a syphilitic eruption, notably of the tubercular and ulcerating form, in deciding the case by a course of iodides, and even sometimes in combination with mercury. Even when the patient fails us in giving a history of early syphilis, we give him the benefit of the doubt. It may be a mother infected *in utero* who has escaped all the early lesions, but falls a victim to tertiary disease after many years; it may be an old soldier who remembers that in the army days he did have a "measley" eruption, or the "camp itch," but who never went before his surgeon and was told that he had syphilis. After a lapse of twenty or thirty years, it may be, his indiscretion finds him out in pathologic forms that only iodides can reach.

Dr. Mathews does well to cite the great prevalence of syphilis, and hence its great liability to produce rectal stricture. There are five millions of syphilitic people in the United States, and many of these progress to tertiary lesions with the possibility of

ulceration and consequent cicatricial contraction of the rectal walls.

One would seem justified in many cases of rectal stricture occurring in middle or advanced life, even where no history of syphilis is attainable, in giving this protean disease the benefit of the doubt, as Dr. Mathews may have done. For, as cancer of the rectum, it is virtually incurable, and one to three or possibly four years is enough to tell the tale and confirm the diagnosis.

Intestinal stenosis, as a result of the contraction of dysenteric ulcers, is so rare that Surgeon-General Woodward sums up the experience of the army surgeons by saying that no case was reported to the Surgeon-General's office either during the war or since, and Professor Ouchterlony, in perhaps the most extended dead-house experience of any Southern surgeon during the war, holding *post-mortem* examinations upon hundreds of cases dying of dysentery, saw, as a result, no case of stricture of the rectum. The present writer has seen constrictions of the colon in old soldiers' *post-mortem* on three occasions, and one case of ulceration of the colon due to impacted feces, but not stricture of the rectum.

As to "congenital stricture," Dr. Mathews says: "This term is a misnomer, and should be classed as atresia. And tubercular tissue breaks down; it does not cicatrize in the rectum nor in the throat when affected with tubercle." As Allingham says, "In these cases ulceration is the rule; great ulceration, but little stricture."

Stricture by "spasm" is not stricture at all, as there is no pathological change in the walls; if it exists, it is by nerve influence, as in spasmodic stricture of the deep urethra. Gonorrhea may be a cause; it occurs rarely in prostitutes. The subject of phagedenic ulceration superinduced by chancroids resulting in cicatrization of the rectum is ably handled by Dr. Mathews. He shows the great rarity of rectal stricture from this cause by ample quotations from both Van Buren and from Dr. Kelsey's own book on Diseases of the Rectum.

One final etiological factor is worthy of note in the light of a recent paper by Dr. H. O. Pantzer, before the Marion County Medical Society, "Rectal and Sigmoid Diseases Secondary to

Other Pelvic Affections." Dr. Mathews says "Some (rectal strictures) are said to be caused by pressure, as from abdominal tumors, a heavy or displaced uterus, etc. The rarity of such cases can be attested by the gynecologist."

Discussing Dr. Pantzer's paper, Dr. Guido Bell called attention to the fundamental distinction between the reproductive and the nutritive systems in the higher animals. Physiologically an animal has two purposes in its being; the egoistic or nutritive life, and the altruistic or reproductive life. Nature has closely combined for purposes of economy the nutritive and the reproductive apparatuses, as is shown in the propinquity of the gut to the urinary and generative organs. But she has protected this duality so jealously that a good part of the generative organs may be removed without mutilating or at least destroying the whole organism. This is being constantly demonstrated by the gynecologists who by their knives and needles have in very many cases in late years effected a complete divorce between the nutritive and the reproductive organs of so many of our women, or what at least at one time were women, but are now both physiological and not unfrequently psychological nondescripts. And so with the more recent school of emasculators for prostatic hypertrophy.

In the very nature of her necessities the old nurse who has shaped men and women into the present dual form, provided that the sexual and nutritive apparatuses should be in a great measure free and independent of each other, both anatomically and physiologically, and therefore of course pathologically. Hence we do not look for the cause of disease of the colon and rectum in their immediate neighbors, the ovaries and uterus, in but remote and probably overestimated instances. Until philosophy, as Schiller said,

> "A better way shall bring about,
> The world till then, a little longer,
> Must blunder on through Love and Hunger."

But this is a tangential excursion from the substance of Dr. Mathews' very interesting paper, in which he makes good his old assertion that over half the strictures of the rectum are due to the prevalence of syphilis. Confirmatory evidence might possibly be found in the diminished occurrence of syphilis in those

Acadian portions of the Canadas where the disease is notably rare, or by the examination of the rectums of those less than two hundred Esquimaux discovered by Dr. Kane nearly a half century ago, the most northern and the most isolated people of the earth, who do not suffer from either syphilis or tuberculosis. Certainly for the study of syphilitic gummata and consequent cicatrization of the rectal walls, the respective vantage grounds of Drs. Mathews and Kelsey in the rich whisky belt of Louisville, and the slums of New York City, are infinitely superior to that of most of the physicians who may chance to pass these lines through the sight of their eyes, and therefore we resign the discussion to them, confident that it will be continued, if at all, with the good-natured vivacity (almost French) and the scientific accuracy (almost German) that has characterized the discussion down to the date of Dr. Mathews' recent excellent paper.

Browning, William W., Brooklyn: A Contribution to the Knowledge of the Anatomy of the Levator Ani Muscle. (*Medical News.*)

Many different descriptions exist of disposition of the fibers of this muscle, though there is a practical unanimity of opinion as to their origin. Testict's description is as follows: "The muscle originates (1) in front of the posterior surface of the body of the pubic bones on each side of the symphysis, (2) behind from the internal aspect of the ischiatic spine, and (3) in the interval included between these two points from a sort of fibrous arch which extends from one of the above points to the other, and which may be regarded as a thickening, on its margin, of the obturator fascia."

From the investigations of the author, not fully complete, he is prepared to state that the description of Savage is much more near complete than that of Luschka. The muscle is as well if not better developed in the male than in the female. It may be divided into three portions with reference to the origin and insertion of its fibers. The so-called pubococcygeus of Savage arises from the intrapelvic surface of the body of the pubes and the posterior or superior layer of the triangular ligament. This latter fascia blends with the obturator fascia along the descending pubic ramus, thus rendering the origin of this portion of the muscle more extensive than usually described.

It will be seen, also, to be on a plane, superficial to and intersecting that of the portion of the muscles posterior to it. The fibers arising as above described soon gather to form a band distinctly separable from the rest of the muscle, and about one half inch in width and one eighth inch thick. It takes a course nearly horizontally backward to the anus. At its insertion it is bilamilar. The superficial fibers are continued into the external sphincter ani muscle; of the deep fibers a few turn forward and are lost in the perineal body. They were not traced to the median line.

By far the greater number take a backward course. Posterior to the rectum they come in close contact with their fellows from the opposite side, but are not continuous with them. Some terminate in the rectococcygeal raphe, but many reach the coccyx. The fibers from the pubic band do not terminate in the rectal wall or in the fascia, but as it sweeps by the vagina it is separated therefrom by an interval of one quarter inch, but a few stray fibers from its lowermost origin cross it and terminate in the vaginal wall.

The fibers of the levator ani which arise from the ischial spine form a distinct bundle separable from those of fascial origin. It takes a transverse course, and is, for the most part, inserted into the fourth coccygeal segment. A few superficial fibers turn forward and are inserted into the rectococcygeal raphe.

The intermediate portion of the levator ani is thin and membranous. It consists of a number of fascicles which arise from a fascia weakly attached to the "white line." Their direction is downward, backward, and inward toward the rectum and the rectococcygeal raphe. When these fibers reach the side of the rectum and approach the raphe, all turn sharply backward and run nearly parallel to the middle line. Some reach the coccyx, others become aponeurotic before doing so.

The muscle is lined by the thin anal fascia, which is closely adherent to it, but it can be easily dissected from the strong recto-vesical fascia which lies superior to it and which sends processes to the bladder, the vagina, and the rectum, and between them. The muscle from its insertion into the perineal body, the external sphincter ani, the postrectal raphe, and the coccyx, pulls upward and forward the postvaginal structures of the pelvic floor.

A very noticeable result also of traction upon the pubic band is to evert the anus.

As objections to the claim that the levator ani muscle is the principal support for the pelvic contents of woman, the following are offered: (1) That in the human subject it belongs to the class of rudimentary muscles. (2) That the weakness of its origin as well as the direction and the insertion of its fibers is inconsistent with such design. (3) That it is unphysiologic for a muscle to furnish a continuous support. (4) That the rectovesical fascia is in itself sufficient, when intact, to afford the required support. (5) That the muscle is no better developed in the female (in whom the support is most required) than in the male.

WELLS, EDW. F., CHICAGO: FISTULA IN ANO AS A COMPLICATION OF PULMONARY TUBERCULOSIS. (*The Charlotte Medical Journal.*)

That fistula in ano is a frequent complication of tuberculosis; that a large proportion of the subjects of anal fistulæ are likewise tubercular; that operations for the cure of these fistulæ are very often unsuccessful; and, finally, that fistula in ano is a salutary vent in tuberculosis which can only be interfered with to the detriment of the patient, are traditional opinions which are very thoroughly grounded in the medical profession. These opinions seem to be based upon personal, diffused, and irresponsible authority, and their origin is lost in the hazy obscurity of the past. Are they true, and should they prevail as prognostic and therapeutical guides? These are questions of such importance to the practical physician as to merit his careful consideration.

When medical and surgical patients of every description—ambulatory as well as those confined to bed—are considered, fistula in ano occurs about once in 750 cases. Of those who enter general hospitals for treatment, about one in 150 persons has fistula in ano.

Statistics as to the frequency of fistula in ano in pulmonary tuberculosis are neither abundant nor satisfactory.

In the Brompton Hospital for Consumption anal fistula occurred in four per cent. of 8,000 cases of phthisis; but in another and more recent series of cases it appeared in only one per cent. During ten years there occurred in the U. S. Marine

Hospital service 534 fatal cases of pulmonary tuberculosis, only two of which were complicated with fistula. Of 800 phthisical patients examined by Andral, only one had fistula. Louis, in his statistical investigations of tuberculosis, found that fistula in ano was very rarely observed. In my own private practice, extending over a period of more than twenty years, fistula in ano appeared in only one case of pulmonary tuberculosis; and in this instance the fistula, which was short and superficial, and gave rise to very little inconvenience, had existed several years before the development of pulmonary symptoms.

The development of an anal fistula in a tubercular subject appears to follow the ordinary course. Although ulceration of the intestines in the neighborhood of the cecum is very frequent, and ulceration of the colon and upper portion of the rectum is not uncommon, ulceration of the lowest portion of the rectum is rare. It is probable that in the great majority of cases the fistula is preceded by a perineal abscess.

The peri-anal abscess may be tubercular in its nature. The infection in such cases may originate in the glandular tissue at the bottom of a normally existing pocket between the external and internal sphincters. In these cases the fistulous opening, or the wound following an operation, is apt to have the characteristics common to tubercular ulcerations in other parts.

Fistula in ano has been considered as protecting against the development of pulmonary tuberculosis; as acting as a salutary vent in and retarding the progress of phthisis; as being difficult or impossible to heal; and that the operative interference in these cases is usually followed by dire consequences to the patient, although dissenting opinions are not wanting.

The following are the author's conclusions:

1. That fistula in ano occurs oftener in the subjects of pulmonary tuberculosis than in the case of the otherwise healthy or those affected with other diseases.

2. That the fistula, in these cases, may be either tubercular or non-tubercular in its nature. If the former, it is difficult to cure by an operation, and if an operation is decided upon it should be more radical than those heretofore in vogue—experience and authority have condemned the ordinary operation of simple incision in these cases. If the fistula is free from local tubercular

involvement an operation is advisable, and it will be generally successful.

3. That fistula in ano is in no sense a salutary issue, and that every operable case which is annoying to the patient should be cured, if possible, and that endeavors should be made to so improve operative measures as to permit the subjects of tubercular fistula to be operated upon with a fair promise of success.

CRIPPS, HARRISON: A DEMONSTRATION ON ANAL FISSURE OR ULCER IN THE OUT-PATIENT DEPARTMENT OF ST. BARTHOLOMEW'S HOSPITAL. (*British Medical Journal.*)

Gentlemen, as we have now finished seeing our out-patients, I will take the opportunity of briefly referring to the two rectal cases we have examined, for they afford excellent examples of one of the commonest forms of rectal trouble, namely, anal ulcer or fissure.

When a patient complains of rectal disorder, it is possible by a few selected questions to form a fairly accurate view as to the nature of the trouble. Of course a positive diagnosis can only be arrived at after a careful and thorough examination of the part. In calling your attention to the questions that I asked the patient, you must not for a moment be led into the error of supposing that it would be right to treat any rectal disorder unless the diagnosis had been confirmed by a physical examination. Patients with rectal disease nearly always assert that they are suffering from piles, and, unfortunately, no inconsiderable number, who from a false modesty have objected to an examination, have been taken at their word and treated for supposed hemorrhoids, when in reality they had nothing of the kind, but were suffering from ulceration, polypus, or even cancer. The following are the chief questions which, before making an examination, the patients may be asked with advantage:

1. How frequently do you go to the closet?

2. Do you pass any discharge from the bowel, and what does it look like?

3. Do you have any pain, and does it come on immediately after passing a motion?

4. Does any part of the body come down at stool?

5. Do you pass any blood?

6. Is the pan ever sprinkled or splashed with blood as if it had come out in a fine jet?

The foregoing questions have the following significance: If patients say they have frequent calls to the closet, extending over some months, you will almost certainly find (if the trouble originates in the rectum) there is either ulceration, cancer, or stricture. On the other hand, if they complain of constipation, or do not go to the closet more than once a day, you may be pretty sure that none of these diseases are present. It is a common error for students to consider constipation as a symptom of stricture. In reality it is just the reverse, and patients with stricture nearly always complain of diarrhea. If a discharge is complained of, it is necessary to ask whether this comes from the interior of the bowel on going to the closet or whether it comes from the outside, as evidenced by stains on the linen. If from the inside and clear, like the white of an egg, it may be mucus from internal prolapse or piles. If the quantity is considerable, a villous growth or polypus may be suspected. If the discharge from the bowel is purulent, or has a coffee-ground appearance, there is possibly internal ulceration, fibrous stricture, or cancer. Discharge originating external to the bowel and staining the linen generally comes from fistula. When part of the body comes down at stool it will be either prolapse, internal piles, or polypus. Bleeding is common to almost all forms of rectal disorder, but there is one particular form of bleeding which is almost characteristic. If the pan is sprinkled with blood, whatever else may be the matter with the patient, internal piles are almost certainly present.

Pain. Any disease situated about the anus or the last inch of the rectum gives rise to pain, whereas extensive ulceration or cancer situated above the internal sphincter may be almost painless. There is a particular form of pain, however, which is of peculiar interest as regards the subject we are discussing, and when present is most suggestive. Let us consider the answer which the first of the two patients gave to this question. The pain was what brought him to the hospital. He says that for some months every time on passing a motion he has severe pain. Sometimes this starts while he is actually passing a motion, though more commonly it does not come on for half a minute or

so afterward. At times he describes it as positive agony, making him break out into sweat; sometimes it only lasts a minute or two, at others it may be half an hour or more before it goes; when it is gone he feels fairly comfortable till the next motion, when the whole phenomenon is repeated. A motion is so dreaded from the pain it causes that he often abstains from passing motions for days together.

The second case was a woman. Her general description of her symptoms was very much the same as in the first case, though in a less degree. The pain was described as of a burning nature, though occasionally pretty sharp; was often comparatively slight, and sometimes for a week or two she would have no pain at all.

From the description that these patients gave us of their condition it was almost certain that they were suffering from anal ulcer, and such, after examination, has proved to be the case. These ulcers may be situated in any part of the anal circumference, but in nine cases out of ten they are in the middle line behind. They are never very large, being seldom bigger than half the size of a threepenny piece, and are placed so that half their circumference is on the mucous membrane and half on the muco-cutaneous surface. They vary in depth, the recent ones extending only just through the superficial membrane. In the older ones the submucous tissue is destroyed, so that the fibers of the external sphincter muscle are visible at the base of the ulcer. Sometimes on examination in place of an ulcer a little hole may be seen, and on passing a probe into this it will be found that the muco-cutaneous surface is detached over a little space, the ulcer being covered in, as it were, by the surface tissue. These cases are of the utmost importance, for the little orifice leading to the submucous ulcer is readily overlooked, and I have seen many cases where, on account of this, the patient has been told that there is nothing wrong with the part. The way to examine a patient with symptoms of fissure is to get them to the edge of a couch in a good light, and then, telling the patient to strain down, the anal folds should be gently drawn apart with the fingers. The lesion then can be clearly seen; generally, just external to the site of the ulcer, will be found a little rose-colored edematous fold of skin. On no account should the finger be passed at the time of the mere examination. The sphincter

spasmodically contracts, and exquisite pain is caused. If there is any suspicion of disease higher up the bowel, it should be examined under an anesthetic at the time of operating on the fissure.

If a patient has the characteristic pain caused by anal ulcer, and yet nothing can be seen at an ordinary examination, the patient should not be pronounced free from disease till a second complete examination under ether has been made.

Treatment. This may be considered as palliative and operative.

Palliative. If the case has been of comparatively recent origin, if muscular fibers are not exposed, and there is no undermined muco-cutaneous surface or sinus present, there is a fair chance of a cure being effected by simple remedies. The motions must be kept soft by a laxative; a teaspoonful of the confection of senna early every morning is effective. Capsules of fifteen to thirty drops of the fluid extract of cascara sagrada may be taken at bedtime, or the following dinner pill: Pulv. col. co., gr. x; pulv. rhei., gr. xx. Mix, and divide into six pills, one to be taken at dinner time. The anus should be gently washed with soap and water night and morning, and on no account should paper be used in the closet, the part being cleaned with a sponge or cotton wool and water. Two ointments may be prescribed; the one a soothing ointment to be applied five minutes before the motion is passed, the other an astringent ointment to be used at night. It is better for the patient to apply this with his finger than by any form of ointment introducer, for the ulcer is just at the orifice, and if the patient strains down it can be effectually applied. Six grains of morphine to an ounce of unguentum petrolii is a good soothing ointment; for an astringent ointment subsulphate of iron, ten grains to an ounce, may be used, or tannic acid in the proportion of twenty grains to the ounce. Another ointment I have seen occasionally effectual is fifteen drops of carbolic acid, ten grains of powdered camphor to the ounce of simple ointment or unguentum petrolii.

Operative. Palliative treatment may have failed, or the case from the first may be one better treated by operation. If the ulcer is of old standing and the muscular fibers exposed, or if the edges be undermined or a sinus present, palliative treatment is mere waste of time, for by an operation properly performed the patient may be cured. It should be done as follows: At

bedtime two days preceding that of the operation the patient should take two pills (pulv. col. co., gr. iv ; pulv. rhei., 10 gr. vi. Mix and divide into two pills). This will insure the bowels being well opened the day before the operation. On the morning of the operation, and an hour before its performance, the bowels should be washed out by an injection of a pint of hot water. The patient being under ether in the lithotomy position, the sphincter is gently dilated. The ulcer is now thoroughly examined with a fine probe to see if any fistulous tract exists, and the extent to which the edges may be undermined. If a sinus exists it must be laid open ; if there is no sinus, or if present after it has been divided, a speculum is introduced into the rectum. The surface of the ulcer is then divided in the middle by a clean cut. The incision should commence on the mucous membrane half an inch above the ulcer, and end on the skin half an inch or a little more below it. The depth should be such as partly to divide the external sphincter, and to accomplish this it would have to be at least a third of an inch in depth in the middle. It is quite true that in many cases a more superficial incision will suffice, but as superficial incisions are often insufficient, it is better to make a bolder one at once. Moreover, the depth of the wound makes little difference in the time taken in its healing. After the incision has been made, a narrow strip should be cut with a pair of scissors off the two edges, which will otherwise overlap and interfere with the healing. A strip of lint smeared with eucalyptus ointment laid in the cut, and covered with a pad of aseptic cotton wool, completes the operation. For a fortnight the patient should be kept in the recumbent position, and, as in all other rectal operations, the wound should be thoroughly washed and redressed night and morning. A dose of castor oil is given to open the bowels on the fifth day, and after this a mild laxative every alternate evening. When the patient is allowed to get up it will do him no harm to walk about a bit, but he should sit as little as possible till the wound is completely healed. Nothing retards the healing of a rectal wound so much as the congestion produced by long sitting.

Gentlemen, no doubt you will think that the operation and subsequent treatment is rather elaborate for so small a lesion as an anal ulcer. It is quite true that many of these cases are cured

by caustics, slight scarification of the surface, or simple dilatation; but if you wish to do the best for the patient and yourself by making a certainty of the cure, let me advise you to try no half measures, but perform a carefully planned operation, as otherwise you will certainly from time to time have a percentage of failures.

Wood, W. B., Orange, Cal.: The Rectum. (*The Southern California Practitioner.*)

There is no cause of suffering that affords to the general practitioner more of his financial success than chronic affections of different members or organs of the human system resulting from diseases of the rectum, and yet how few physicians give them attention, or have the instruments by which to discover such disease without pain, or at all. You may travel the country over and you will seldom find a physician, although only a boy comparatively in years, who is not prepared at a moment's notice to make a full and complete examination of the vagina and uterus. And yet, while the cause of the uterine trouble may be found by the aid of proper specula in the rectum, no provision whatever has been made for such explorations. Why should this be? The physician who seeks the welfare of his patient should not couple curiosity with all such acts. He should remember that there are at least twice as many rectums as wombs, and that there are scores of rectal diseases to one uterine disease, as well as that most of the uterine diseases result from greater troubles in the rectum, and that while they are steadily failing in treatment of effects of causes only, there need be no failure if they commence with the cause of the trouble. The time has fully come when physicians should be as desirous to examine the rectum as the uterus, and when such is the fact many fountains of sorest affliction will be dried up, and the field of the practitioner greatly extended, and the days of his greatest usefulness be near at hand. The construction of the human body that walks the earth to-day is identical with the models according to which all preceding generations of men have been constructed. Every human being possesses two nervous systems, a cerebro-spinal, which presides over conscious sensations and voluntary activities, and a sympathetic, which superintends all organic functions, ministering perpetually

to bodily wants and having in charge what we now recognize as all involuntary processes of life, such as the circulation of the blood, the digestion of food and its distribution to the tissues, and all processes known as secretion and excretion, by means of which the body attains its growth and secures the necessary repairs for its continual existence.

The human body is a bundle of nerves and reflex actions. Any irritation in any one part is liable to produce an irritation in some other part, the nature and locality of which will depend upon the degree of irritation and the constitution of the individual. This is true of all parts of the body, on the surface, or beneath the surface, and of all the organs. There are certain organs which, on account of the complexity of their nerve supply, are pre-eminently centers of reflex irritation. Among the most conspicuous of these reflex centers are the stomach, the intestines, the liver, the uterus, the ovaries, the prostatic urethra, and the eyes. Next to the stomach in point of importance as a reflex center are the uterus and the ovaries in the female and the prostatic urethra in the male. These organs are naturally so physiologically and anatomically. And the close relationship of the uterus and ovary and the prostatic urethra to the rectum readily explains how these centers may be and are disturbed by any disease of that organ. These reflex disturbances take place not only through the ordinary motor and sensory nerves, but through the sympathetic and vaso-motor nerves. The nerves supplying the rectum are derived from the cerebro-spinal (third and fourth sacral nerves) and sympathetic. It is unique in that it is the only portion of the intestinal canal which is supplied by a spinal nerve, and the sphincter ani is more richly provided with nerves than any other of its class, or in fact than any other muscle in the human body. The intimate connection and close relationship, therefore, of the sympathetic system to the sexual organs, the stomach, liver, heart, spine, and the brain, show what organ or organs would be affected by any irritation that would derange or disturb its equilibrium. The irritation from a small rectal ulcer, or the pressure exerted by internal hemorrhoids or polypi, acts as an excitant to the sympathetic and cerebro-spinal nerves. The hardened semi-cartilaginous cicatrix in an old lacerated cervix acts as an irritant or

foreign body, and produces that long train of annoying, unyielding, and unremediable nervous symptoms which disappear only when the cause, the hardened cicatrix, is removed. The elongated prepuce with its accumulated smegma causes many and serious nervous disturbances in the young and old. Remove the elongated prepuce by circumcision, and the convulsions stop, the various nervous symptoms disappear, and the paralysis becomes better. The young man who has been leading a fast life, and who is suffering from a sensitive prostatic urethra, with the attendant symptoms of nervous exhaustion, can be promptly cured by treating the diseased urethra; just so with persons suffering from rectal irritation; divulse the sphincters, remove the hemorrhoids and pockets, heal the rectal ulcer, and the patient, who has been apparently hopeless, will recover slowly but surely. The intimate connection which is maintained between the vital centers and the lower portion of the rectum and its sphincters through their extensive nerve supply is demonstrated at every operation upon these parts. All who have experience in rectal surgery will recall that however profound the anesthesia, divulsion, unless accomplished with extreme care and deliberation, invariably produces stertorous respiration, profound modification of heart's action, immediate congestion of the cutaneous capillaries, and muscular contraction and rigidity sometimes amounting to opisthotonos. Until very recently the subject of reflexes has received nothing like systematic investigation and study, and the prediction that we are merely upon the threshold of discoveries to which the above will form but an imperfect introduction is more than idle dreaming. The benefits which have already resulted are great. The crises in which rectal reflexes have proven themselves effective, and the light and hope which they have incidentally cast upon epilepsy, a heretofore all but hopeless disease, are sufficient to call for grateful recognition and inspire a more sympathetic and exhaustive investigation of the entire subject.

Trowbridge, E. H., Boston: Surgical Treatment of Hemorrhoids. (*Boston Medical and Surgical Journal.*)

The carbolic injection is dangerous and inefficient, and is liable to cause peritonitis, embolism, and pyemia; and if a cure

is effected, it takes a long time and causes the patient much suffering.

The crushing method I have not tried; but it is liable to cause sepsis on account of the jagged base of the crushed pile, and sloughing is liable to result.

The use of caustics is to be avoided for the same reason, danger of sepsis.

Of all the methods, hemorrhage is most liable to occur in the use of the ecraseur.

The ligature, while it is the simplest of the radical cures for the internal hemorrhoid, causes the patient severe pain from the time of operation until the ligatures come away; retention of urine, from a few days to a week or more, is the almost universal rule; difficult and painful defecation; confinement in bed from twelve to fourteen days.

If there is any one present who has undergone the ligature operation, I think they can sympathize with the speaker in saying that they are not very desirous to repeat the experience of the first ten days following the operation.

The Whitehead method, that is, excising that portion of the mucous membrane which contains the hemorrhoidal plexus is not all that was promised for it. It should be employed only in selected cases. Full and complete paralysis of the sphincter muscle is absolutely necessary. The operation is difficult, tedious, and bloody; and if non-union occurs there is retraction of the mucous membrane, and a large circular granulating area left, which may be the source of sepsis. Retention of urine is also liable to exist for a week or ten days.

In the case of the clamp and cautery none of the above mentioned consequences or complications occur.

The operation can be done (1) expeditiously, and with little loss of blood; (2) the cauterized base of the pile is rendered aseptic by the cautery; (3) there is no pain following the operation; (4) retention of urine is extremely rare (I have never seen a case where the patient suffered from retention); (5) convalescence is brief and uninterrupted—confinement in bed from three to seven days is sufficient.

Such in brief are the advantages in operating with the clamp and cautery.

Quénu: Cancer of the Rectum. (*Rev. de Chirurgie; Montreal Medical Journal.*)

Dr. Quénu gives in this paper the results of some very close study of the onset of cancer of the rectum. Nothing is clinically more obscure than the onset of malignant disease in this region. The disease has often made great progress before any alarming symptoms are developed. The evolution to a certain point of an epithelioma of the rectum is compatible with an appearance of health. Pain may be absent or only a vague sensation of weight about the sacrum, such as many people suffering from constipation complain of. Among the early symptoms which should arrest the attention of the surgeon and lead to further inquiries may be mentioned: At the outset—in a certain number hemorrhage is the first manifestation noticed; in others abnormal sensations or a failure of the general health.

Hemorrhage may occur suddenly and in considerable quantity after a stool. Four cases, giving this history, are mentioned. The first hemorrhage in one instance was said to be half a glassful; in another, three hemorrhages in one day aggregated over a liter, and in other cases it is said to have been very abundant.

The occurrence of these large initial hemorrhages is difficult to explain; it would be expected to occur during a period of ulceration; perhaps it may be due to venous obstruction and engorgement, or to secondary hemorrhoids which often accompany or follow rectal neoplasms.

More frequently the hemorrhage observed at the commencement is not abundant, but appears as a few drops, accompanying defecation. The feces are, as it were, enveloped in a little blood.

The blood is generally red, but if taking place slowly may lie for some time in the rectum and become black or like coffee; or it may appear as bloody mucus or in streaks.

Abnormal sensations during the early period vary as to their seat, character, and intensity. At times they consist of vague abdominal pains, a sort of colic, and at times they appear to be more localized in the region of the disease.

Some patients suffer only during the expulsion of feces or directly afterward. Probably the greater number of patients complain of a weight in the region of the sacrum and coccyx, and they have a frequent desire to go to stool, and pass only a little gas and mucus.

Exceptionally diarrhea opens the scene. Patients are often misleading on this point. Loose stools following an interval of two, three, or four days of complete constipation are not infrequent; again patients sometimes imagine that they are the subjects of diarrhea because, when yielding to an almost continuous desire to defecate, they pass some gas, or mucus and slime, a sort of false diarrhea.

These symptoms occurring in a patient over forty-five years of age, especially in a patient losing weight, strength, and color, should be very thoroughly investigated. We may fail to discover new symptoms, but we can carefully study old symptoms, their modifications, variations, and groupings, and thus become able in an increasingly large number of cases to make a diagnosis early when the disease is removable.

Bell, James, Montreal, Canada: Carcinoma of the Middle and Upper Portion of the Rectum. (*Montreal Medical Journal.*)

The relative frequency of this condition, the obscurity of the symptoms attending it in its earlier history, and the successes achieved by the modern operative methods of treatment were the reasons for the report of three cases seen by the author.

Case 1. Male, fifty-eight years old; family history perfect; diarrhea and hemorrhage had lasted for about a year; loss of flesh for six months, and there had been three attacks of intestinal obstruction with stercoral vomiting.

A hard, indurated, nodular mass was found two and one half inches from the anus, extending lower on the posterior than on the anterior wall of the bowel.

An inguinal colotomy was performed; the limit of the growth being defined at this time, and no lymphatic involvement noted. Twelve days later the bowel was opened, and the next day the mass excised by Heinecke's sacral incision. Recovery was uneventful after the fourth day. Four inches of the bowel were removed with a mass of infiltrated glands in the hollow of the sacrum. The proximal end of the bowel was brought out and attached in the upper angle of the wound after the removal of the left half of the lower portion of the sacrum. The distal end was inverted and closed by suture. In two months the patient

had gained fifty pounds. Adeno-carcinoma was the pathological report.

Case 2. Male, forty-five years of age, was first under observation for stone in the bladder, which was successfully removed. Four months later he returned complaining of inability to evacuate the bowels, and hemorrhages from the rectum. Three inches from the anus a hard ring of irregular, indurated growth could be felt. Colotomy was done, and as before the abdomen explored and the limit of the growth defined. No lymphatic involvement was found, but one of the appendices epiplocai of the sigmoid was removed because it appeared to contain a small spot of cancerous infiltration. Microscopical examination confirmed this diagnosis.

Ten days later the growth was removed, four inches of the bowel being involved, by Heinecke's incision. Similar treatment of the ends of the bowel was done as in previous case. Patient died three months later of early metastasis.

The points of interest in this case were the early age of its occurrence, extremely rapid course, producing obstruction within three months of the first appearance of symptoms, and metastasis already begun at the time of operation.

The third case was similar to the ones here reported.

On account of the obscure nature of the early symptoms it should be the rule to make a thorough rectal examination in all cases of long-standing derangement of intestinal function, where a definite diagnosis can not be made and when there is no palpable tumor in the abdomen. Cancer of the rectum when radically removed shows no more tendency to recur than cancer of the breast.

As to the methods of removal, no portion of the bone is removed in Heinecke's incision; it is simply displaced with its adherent soft parts.

The following conclusions are offered:

1. In accordance with the principles generally recognized in the operative treatment of malignant disease, when the neoplasm is sufficiently localized it should always be removed.

2. In order to determine this point (localization), as well as for safety (from sepsis) during and after the operation, a preliminary inguinal colotomy should be the rule.

3. The ideal operation is the excision of the growth through healthy tissues and approximation and union of the ends of the bowel so as to re-establish its lumen. The ideal, though here as elsewhere seldom attainable, should always be aimed at; and to this end it is better to make the incision in exposing the rectum in such a way that the displaced portions of the sacrum may be replaced if it be thought necessary or desirable to do so.

4. That the sacral route is the only one which can be satisfactorily employed for the removal of lesions in the middle portion of the rectum.

Edwards, F. Swinford, London: The Removal of High-lying Cancer of the Rectum by Kraske's Method. (*British Medical Journal*, No. 1898.)

The author reports a series of fourteen cases as to the relative merits of total extirpation *versus* colotomy. The consensus of opinion among English operators seems to be in favor of the latter, which in the author's opinion is at best only a palliative measure, for according to him, in cases where one can feel morally certain that the entire disease can be removed even at the risk of life, the patient should be given the benefit of the operation, which may permanently rid him of the disease, or at least delay the recurrence for some years.

Contrary to the accepted views that when the growth has extended beyond the reach of the examining finger, the case is unfit for excision, he states that the position of the growth, *per se*, is no bar to its removal. For anal carcinoma the old perineal operation will suffice; when it extends to a level of the sacrococcygeal articulation behind, probably a coccygeal excision will suffice, but for cases extending further up, even as far as the pelvic brim, the removal of the lower portion of the sacrum, or Kraske's operation, must be undertaken.

Lymphatic infection generally militates against success of any rectal excision, or the extension beyond the rectal walls; the rectum then, instead of being movable on its bed of adipose or areolar tissue, is bound down or fixed to the neighboring parts. Extirpation under such conditions can only end in disaster.

Preliminary preparation of the patient by washing out the rectum with sublimate solution is recommended after

getting him in the best possible physical condition. The latero-abdominal posture, with the thighs well flexed, is recommended.

A central longitudinal incision of six inches is made through the soft parts to the bone, the coccyx being removed first to ascertain whether enough room can be had. If a portion of the sacrum must be excised, it can be best divided by means of a saw, but the author recommends a chisel as more expeditious. On account of the bleeding likely to occur from the divided sacral vessels, and the difficulty of their seizure, the presence of a competent assistant is indispensable.

It is best not to attempt to dissect the bowel from its bed of fat, thereby avoiding a good deal of bleeding. It is an advantage to open the peritoneum, for unless it is done the bowel can be brought down only with difficulty. The affected part removed, any opening in the peritoneum can be closed by means of continuous suture.

The ideal method is to bring the bowel down and suture it to the margin of the skin. When the wound is left open it should be well packed with gauze.

As regards the after-treatment, it is better if the bowels remain confined for a week, though they generally move before then, despite the administration of opium. Patients generally begin to get up and about in a month, and at the end of two are practically well. Some form of truss may have to be worn. A summary of the fourteen cases reported shows two deaths, a mortality of fourteen per cent.; two recurrences, one in two years and one in two months, ten living and well; of these one after five years, two in nearly three years, one after one year and nine months.

Parker, Wm. H., Richmond, Va.: Pathology and Treatment of Internal Hemorrhoids by Ligature. (*North Carolina Medical Journal.*)

There are few diseases in which, as in piles, the surgeon is able to assure the patient in every case that he can positively be cured.

Piles have their origin in the overdistended and varicose hemorrhoidal vessels, principally the veins, modified by the mechanical violence to which their position exposes them. The

causes of this condition are absence of valves in the veins, erect position, and the peculiar office of the rectum.

It has been stated that the practical outcome of the investigations of Verneuil on the anatomy and physiology of this region is that for the cure of the great majority of internal piles nothing is required but the gentle and thorough dilatation of the sphincter muscles, which should be thorough and include both sphincters; but this view is not held by the author.

In describing the operation, the following is stated: "A curved needle with a double thread is run through the base, and clipped. The mucous and muscular coats are cut around the base, and the ligature tied as tightly as it can be drawn. *In this way there is no pain after the operation.*" We have failed to see many cases in which this or any other method was devoid of pain, following operation.

BODENHAMER, WM., NEW ROCHELLE, N. Y.: ATONY OF THE RECTUM AND ANAL SPHINCTERS. (*New York Medical Journal, Vol.* LXV, *No.* 25.)

This is not an uncommon disease, but is usually confounded with what is commonly called constipation, which does not designate any disease—the latter representing a cause or an effect of atony, but not that disease itself.

Atony consists essentially in the loss to a greater or less degree of the tone or contractile power of the muscular coat of that organ.

The term "constipation" would appear to be a collection or impaction of excremental matters in some part of the intestinal canal, the residuum of the various processes concerned in alimentation. As to causes of this disease, a number are mentioned. The habitual neglect to attend strictly to the calls of nature in regularly emptying the rectal pouch is often a cause; an excessive quantity of gas generated in the stomach or ingested with aerated waters accumulates in the colon and rectum, producing constant undue distension of the walls of the intestinal canal.

The liver is generally considered at fault in constipation, especially that form described by M. Bretonneau as "rectal constipation," but the torpor is not in the liver, but in the rectum

itself. The constant habit of daily using warm or hot water injections into the rectum for the purpose of evacuating this torpid organ is a frequent cause of atony. By it the muscular fibers are left more or less softened, relaxed, and deprived of their contractile power. Cold water should be used.

A sensation of fullness or weight is felt in the rectum when atony is present; a frequent desire for stool, but an evacuation, if effected, does not altogether appease the desire. Tenusmus, mucus tinged with blood, or a discharge of fluid feces may be present.

A strict observance of regularity should be insisted upon. When the treatment is instituted this may be aided with benefit by the injection of half a pint of cold water at this time.

Nux vomica alone, or combined with other ingredients, is also indicated. Proper aperients are often essential. Astringent and tonic injections are often of great benefit, such a formula as the following being recommended:

℞ Acidi tannici..... gr. xxx.;
Vini Rubelli..... ℥ iv.
M.

The following is the formula of the injection recommended by M. Brétonneau:

℞ Ext. rhataniæ..... ℥ ij.;
Spr. vini rectificati..... ℥ v.;
Aq. distillatæ..... ℥ ss.
M.

GASTRO-INTESTINAL DISEASE.

CRIPPS, HARRISON: COMPLICATIONS ARISING IN INGUINAL COLOTOMY. (*British Medical Journal.*)

The author gives the results of his experience in 170 cases of colotomy done for malignant disease of the rectum. The larger number of operations were done as a palliative treatment, in cases in which more or less stricture was present, though obstruction was not complete; in the minority of cases it was performed as a means of saving life. In the former the death-rate was slightly less than 4 per cent.; in those where obstruction was complete it was 30 per cent. The high mortality of the latter cases is due not to the operation but to the condition of the patient—apart from this the risk of septic peritonitis is greater when colotomy is done on completely blocked and distended intestine.

It is a very different matter handling intestine when distended than when it is flaccid and empty. The tightly stretched peritoneal investment of an inflated intestine will split and crack with a very little handling. It is like india-rubber in this respect, which will split with ease when tightly stretched, but will stand a considerable amount of manipulation when relaxed. These tears in the peritoneal coat are regarded often as the starting point of a fatal peritonitis. Then again the actual stitching of the distended bowel to the parietal peritoneum and skin is very difficult to accomplish without risk of the needle perforating beyond the muscular coat, and thus getting the wound contaminated before the peritoneal cavity is completely closed.

The object of this communication is not, however, to argue the advantages of an early over a late colotomy, but rather to consider what are the dangers arising when an inguinal colotomy is undertaken in good time on an undistended bowel. The complications which render the operation dangerous may be either met with at the time of operating, or may occur subsequently.

The following complications are enumerated:

Difficulty in Finding the Bowel. The more experience the operator has the the less likely is he to meet with trouble in this respect. If the bowel does not immediately present itself, it is

best found by passing the forefinger deeply into the abdomen, and feeling for the brim of the pelvis, and by sweeping the finger along the brim the upper part of the rectum can be felt passing over it, and by keeping the finger in contact with this it will guide the operator to the sigmoid flexure. In these cases the flexure is almost invariably nearer the middle line of the abdomen than where the operator has been searching. An injection of water will often distend the intestine until it is easily located.

Absence of Mesentery. This is perhaps the most unfortunate and dangerous complication that can be met with. In the great majority of cases the mesentery of sigmoid flexures is amply sufficient to allow of the bowel being well drawn up in the wound and safely fixed without tension; but in 3 or 4 per cent. this is not so, for there is absolutely no mesentery, the bowel being bound back firmly against the posterior parietes. This is either due to the congenital deficiency, or to malignant disease behind the colon fixing it firmly. The question to be considered is as to what should be done after the operator has opened the abdomen and met with one of these cases. The sutures will certainly cut through, leaving an open peritoneal cavity. The surgeon has three choices: He may either abandon the operation altogether, he may close the abdominal wound on the left side and perform a colotomy on the right side, or he may endeavor by some modification of the usual operation to fix the bowel without dangerous tension. If he abandons the operation altogether he is not to be blamed; but rather than do this most surgeons would prefer to close the wound and open the cecum or ascending colon on the right side. Although the subsequent inconvenience of a right colotomy is far greater than the left, on account of the less solid nature of the feces in that direction, nevertheless it fulfills the purpose for which colotomy was undertaken, namely, the establishment of a permanent safety-valve against death from obstruction. If the colon is absolutely fixed and lying at some depth from the parietal peritoneum, this is the course recommended. On the other hand, if the bowel is not absolutely fixed it may be possible by means of a Hagedorn's needle to suture the parietal peritoneum to the sides of the bowel, leaving sufficient space between the two layers for the opening. No attempt whatever must be made to draw the parietal peritoneum and the skin

together, the skin and all the structures above the peritoneum being excluded from the sutures. By merely attaching the peritoneum in this way the tension on the sutures is materially diminished. By opening the bowel opposite the mesenteric attachment, and then fixing the cut edges to the parietal peritoneum, tension on the stitches will be further diminished. The objection, however, to this is that the wound becomes at once soiled, and the chance of primary union between the bowel and parietal peritoneum diminished. The following plan may be adopted: Instead of making the linear incision completely through into the bowel, it may be made very carefully through the peritoneal and muscular layers only. These two layers are readily separated and stripped back a little way from the mucous coat. Two sorts of flaps are thus raised, the free edges of which are united to the border of the parietal peritoneum, and are fixed there with comparatively little tension except at the two angles. In any case if the bowel has been fixed to the parietal peritoneum and skin with the least tension, the patient must be carefully watched from day to day, and on the least sign of the bowel falling back additional silkworm-gut sutures should be at once passed through the whole thickness of the edges of the bowel and the abdominal walls.

Complications Occurring Subsequent to the Operation. Prolapse, which was such a troublesome complication in the earlier cases, is now comparatively rare, due in great measure to the fact that most surgeons at the time of operating draw out and remove the superfluous bowel, and in addition to this, by making the opening in the abdominal wall somewhat higher there is much less tendency to protrusion. Indeed, the incision is best made nearly as high as the level of the umbilicus, so that the wall of the lower half of the abdomen, where the pressure is greatest, is left intact.

Undue Contraction of the Opening. This is not an uncommon sequence, and if allowed will destroy the whole advantage of the operation. Too small an opening means a constant dribbling of fecal matter, the motion never getting freely and completely away. These contractions do not occur where the original opening has been made of proper size, and where all the wound has healed by first intention, but occur where the angles of the

wound have failed primarily to unite, and where the granulations gradually become converted into firm contractile tissue. If the angles have not united properly the contraction will begin about the third week, and if at this time a little spring dilator be introduced and worn for a few hours daily for a month, the tendency to undue contraction will be obviated. If this precaution has been neglected, or be impracticable, the opening can readily be made the right size by passing the finger into the bowel, and then completely cutting through all the contractile tissue up to each angle, the depth of the cut exposing the outer wall of the bowel. The bowel is now freed a little on either side of the incision, and a curved needle and silk thread passed through its edge, and through the tissues and skin at the apex of the reopened wound. The suture is tied, bringing the gut well up the angle. A couple of additional sutures may be necessary at the sides. This little operation is practically painless, does not require an anesthetic, and is generally most efficient.

The following case is related to illustrate an unusual complication:

A colotomy was performed at St. Bartholomew's on a middle-aged man. All went well at the operation, and the artificial anus had united firmly, was of the right size, and worked well. The patient was on the eve of leaving the hospital when he was suddenly seized with sharp, griping pains referred to the region of the colotomy opening. An hour or two later he commenced to vomit. The vomiting continued for three or four hours. At this time the patient said he felt something slip in his inside, the vomiting ceased, and the pain suddenly left him. The following day the patient felt quite well beyond a little general abdominal tenderness. A few days after he was discharged from the hospital. Ten days later he was readmitted in a dying condition. He had been vomiting for two days, and was in a state of complete collapse. He stated that thirty-six hours previously he had been seized with a similar pain to that which he had experienced prior to leaving the hospital, and had been vomiting continuously ever since. The patient died in a few hours after readmission. At the *post-mortem* examination the colotomy wound was found to have united firmly, and there was not the slightest sign of peritoneal inflammation. A loop of small intes-

tine over a foot in length was found to have slipped down between the attached portion of the gut and the reflection of the parietal peritoneum in the neighborhood of the anterior superior spine. The canal thus formed was nearly an inch in length, and was bounded on the inner side by the bowel forming the colotomy opening, and in front and behind by the parietal peritoneum, and on the outer side by the reflection of the parietal peritoneum. This canal would about admit one finger through it, and was the seat of strangulation. At the *post-mortem* examination the bowel could be easily withdrawn through the canal. There can be no doubt that the first attack was due to the slipping of the gut through the channel from which it spontaneously released itself. Prompt abdominal section would have saved this patient.

NICHOLS, R. ANGUS, RICHMOND: INTESTINAL OBTRUCTIONS. (*Virginia Medical Monthly.*)

Symptomatology. The most important and prominent symptoms of acute obstruction of the bowels are: Pain, abdominal tenderness, constipation, vital depression, vomiting, tympanites, scanty urine, and, in cases of intussusception and fecal impaction, the presence of tumor.

Pain. This, in acute obstruction, is extreme, often excruciating. In strangulation by a band, or in internal hernia, it usually begins abruptly and continues without intermission, though often diminishing somewhat in severity as the case progresses. On the other hand, in volvulus and intussusception, the pain is at first paroxysmal, with intervals of comparative ease, but afterward becomes constant, and even then it presents periods of exacerbation. The pain is often referred to a particular spot in the abdomen, which sometimes corresponds to the locality of the lesion. More frequently, however, this is deceptive, and no direct connection can be traced between the seat of pain and the strangulated bowel. Probably, in the majority of cases, the pain is referred to the neighborhood of the umbilicus, possibly owing, as suggested by Mr. Treves, to the fact that the solar plexus is situated a little above that position. Abdominal tenderness is usually absent in the earliest stage of acute obstruction, though in cases of enteritis it is present from the beginning. It is soon developed in volvulus and intussusception, but in

strangulation by a band it is almost entirely wanting. Tenderness, limited to a particular spot, unlike pain, is an important symptom, as indicating the seat of obstruction.

Constipation is, of course, a prominent symptom in all forms of intestinal obstruction, but is by no means equally marked in all of the varieties. In cases of strangulation by bands, it is absolute and persistent, and only partial in those of enteritis, and in some cases of chronic invagination it has been at times entirely absent; indeed, in some cases of intestinal stricture diarrhea has been the chief complaint of the patient. Even when complete strangulation has occurred, the use of enemata may cause one or two discharges of fecal matter which has accumulated below the seat of obstruction. In acute intussusception the patient has a constant desire to go to the stool. This is considered almost pathognomonic by some, and with the tenesmus there is not unfrequently a discharge from the rectum of mucus mingled with fluid or clotted blood.

Vital Depression. In connection with the great pain of acute obstruction there is usually great prostration, commensurate with the tightness with which the bowel is strangulated. This is most marked in strangulation by a band and in internal hernia, somewhat less in volvulus and the more acute cases of invagination, and may be entirely absent in obstruction by gall-stones, etc. There is great muscular weakness, the pulse and breathing are accelerated and weak (the former thready and the latter shallow). The temperature is usually below normal (except in enteritis). There is great thirst, the face is drawn with pain, and has an aspect of horrible anxiety, the features become pinched, the eyes sunken, and the voice weak and muffled. A cold sweat breaks out upon the surface, and in extreme cases the limbs become cyanosed and the complexion livid. The patient at last sinks, retaining his intelligence, as a rule, to the last.

Vomiting. This is an early and prominent symptom in cases of strangulation by a band or diverticulum, but much less so in those of intussusception and volvulus, until secondary enteritis is developed, when the nausea and vomiting may be very distressing. The matters first ejected are the contents of the stomach, and then those of the upper bowel; finally it may be decidedly stercoraceous in character.

Tympanites. This is an early and well-marked symptom in cases of volvulus, but it is less prominent in other forms of intestinal obstruction, being indeed often absent until general peritonitis has developed. In all cases of acute intestinal obstruction there is a diminution of the quantity of urine excreted.

The Abdominal Tumor. This is one of the most important symptoms of intussusception. In the vast majority of cases the tumor of intussusception is found on the left side.

It is an elongated cylindrical swelling; in many cases, children especially, the tumor can be distinctly felt through the rectum. The tumor of fecal accumulation is almost always found in the right side (cecum), and may often be made to pit by firm external pressure. This pitting is considered a pathognomonic sign.

FRANK, JACOB, CHICAGO, ILL.: INTESTINAL ANASTOMOSIS. (*Journal of the American Medical Association.*)

After a brief resumé of the subject with references to the various mechanical devices used by different experimenters, the author recommends the following procedure, which in the hands of Dr. McCandless, of St. Louis, was used successfully on a human subject. The appliance is termed a "decalcified coupler," and is as follows:

It consists of two decalcified bone collars with six needle-hole perforations at the apex or shoulder of each collar, and one piece of ordinary pure gum-rubber tubing, seven eights of an inch in length and five sixteenths of an inch in diameter, the kind used for drainage. It is prepared for use in the following manner: A collar is slipped over a piece of rubber tubing of the dimensions stated until the apex is brought to a level with the end of the rubber tubing, when an ordinary medium-sized curved needle, threaded with No. 8 braided silk, is carried through each opening and tied; this, as can readily be seen, fastens the collar to the tube; the other collar is next fitted snugly to the one already fastened, and is then in like manner sewed to the other end of the tube and placed in absolute alcohol until they are to be used. The rubber tubing to which the collars have been sewed, being hollow, serves subsequently for the passage of the intestinal contents after being placed *in situ.*

It will be observed that the bases of the collars, which are formed into a broadened rim, are being held firmly in apposition throughout their entire circumference. Now the intestinal ends are brought over each collar and crowded within the line of junction of the two; of necessity the latter are forced apart, and the rubber tube is put upon the stretch, thus affording pressure of adequate amount to cause a necrosis of interposed intestines. The collars dissolve in due course of time, but a small piece of rubber tubing is left in the intestinal canal to pass off with the feces.

The collars are carved out of sound, very compact bone, which is obtained from the lower hind legs of four-year-old oxen. The collars are now subjected to the decalcifying fluid, which consists of a ten-per-cent. solution of absolute hydrochloric acid, and are removed from this fluid in six hours and placed under a stream of cold water for half an hour to remove the salts which have formed. They are then placed in a fresh decalcifying fluid of the same strength, and the process is repeated until they are completely deprived of their calcareous constituents, when they are washed with cold distilled water, so that all traces of acids and phosphates are removed and the collars have acquired an almost transparent appearance. Then they are practically dehydrated by treatment with pure cologne spirits, and finally immersed in absolute alcohol, which renders them sufficiently tenacious for their purpose.

The General Technique. A median incision from three to four inches in length is made either above or below the umbilicus, the small intestine is drawn out through the wound and the part to be excised is gently freed of its contents by drawing it between the thumb and index finger, when an intestinal clamp is placed at each end of the portion to be cut away, care being taken not to cut too close to the clasp, for if this is done there will not be enough gut to bring over the collars, which will necessitate the removal of the clamp farther back. The main mesenteric branch supplying the excised portion is first ligated with a No. 9 silk. From two to five inches of gut may be resected, according to the fancy of the operator.

Upon severing the intestine, it will be observed that there is an eversion of the edge of the bowel, and also a contraction,

producing a circular constriction at the end of the intestine; this can be easily overcome by inserting a finger into the lumen of the gut and retaining it there for a minute or two, thus producing temporary paralysis and allowing a much easier manipulation of the parts. This stretching of the gut must be gently performed, otherwise the peritoneal covering will split longitudinally. The everted mucosa should be curetted away for the following reasons: (1) It plays no part in the healing process; (2) the running thread of Murphy is more easily applied, and the danger of merely taking up the mucosa and not the other coats is done away with; (2) it permits of nicer coaptation, as, without curetting, the mucosa pops out between the couplers as a pulpy mass. A straight or curved needle threaded with No. 6 silk is used for inserting the puckering string (a description of which can be found in the New York *Medical Record*, vol. xlii, p. 673, 1892,) to fasten the intestine about the rubber tube after the former has slipped over the collars. The puckering string is similarly inserted into the other intestinal end, and the coupler, having been previously prepared as described, is taken out of the absolute alcohol in which it has been placed. The operator slips an intestinal end over one of the collars to the line of junction, at the same time gently spreading the collars apart to facilitate the easy access of the gut. An assistant takes charge of the ends of the puckering string, and when the gut has been brought down until his puckering ligature strikes the rubber tubing, which he will perceive by the resistance offered, the tube will not generally permit a too tight drawing of the puckering ligature on account of its resiliency, but, to make absolutely sure that the tube is patulous, the end of a forceps or sterilized nail may be passed through the lumen; if this is found pervious the assistant finishes the tying of the puckering string. The other intestinal end is then slipped over the other collar and also tied. Of course at this stage nothing can be inserted by which to determine that the tube is not shut off, but, after having tied one side, the assistant will know positively when he strikes the tube. The ligature is cut off short and the clamps are immediately removed, when the operated portion of the gut may be replaced in the abdomen.

Wesener, J. A., Chicago: The Production of Hydrochloric Acid in the Glands of the Stomach. (*Journal of the American Medical Association.*)

In a previous communication by the author he states it was shown that hydrochloric acid is secreted by the mucous membrane of the stomach and not formed by chemic action on the food products or fermentation.

In these experiments it was found that there was nearly a constant relationship in the percentage of it produced after each stimulation. These same experiments the author has since performed in three cases of chronic gastritis.

In these cases free hydrochloric acid could never be detected with Boa's reagent; but, upon quantitative determination of total chlorin before and after evaporation of stomach contents, a difference of chlorin was found which gave about the same per cent. of volatile chloride as was found in the cases of normal stomach, where free hydrochloric was always present.

This decomposition of chlorid was not syntonin, as the experiments were performed upon empty stomachs. This observation led to the belief that a very unstable organic chlorid was being dealt with, which when evaporated to dryness volatilized the same as free hydrochloric acid, but would not give Boa's test. On the strength of this observation the following experiment was performed:

1. Pure nucleinic acid was obtained from three dozen thymus glands of sheep.

2. A syntonin solution was prepared; this contained two per cent. of egg albumin and one per cent. of hydrochloric acid; the acid was all taken up by the albumin.

Then, before proceeding, the nucleinic acid solution and syntonin were tested for free hydrochloric acid with Boa's reagent, to be absolutely certain that it was absent. To five c.c. of syntonin a saturated aqueous solution of nucleinic acid was added as long as a precipitate was formed. (The precipitate is a nuclein proteid.) This precipitate was filtered out and the filtrate tested for free hydrochloric acid. Boa's reagent gave a positive reaction. The experiment was repeated several times, the results always the same.

On making a quantitative estimation of the chlorin in the

syntonin, and after precipitation with nucleinic acid, it was found that all the combined chlorin had been discharged as free hydrochloric acid.

At this time a patient with the following history was seen:

The patient was a man who has suffered from chronic gastritis for several years. The first examination of the stomach contents gave the following: Reaction alkalin, free hydrochloric acid absent, mucus abundant. He was given hydrochloric acid; three weeks later another examination was made. Reaction slightly alkalin, Boa's and Günzburg's reagent gave a reaction for hydrochloric acid. The red color which was produced was not as sharply defined as when free hydrochloric acid is present, but more of a diffuse red; furthermore the reaction did not take place until the last drop was evaporated, whereas when the acid is present in a free condition the color shows very soon after the heating is commenced. A quantitative determination of chlorin before and after evaporating the stomach contents showed that a loss of chlorin always took place. From these facts one is justified in saying that hydrochloric acid is never present in a free state in the glands of the stomach, but always in combination with a proteid, and when this body is thrown off from the glands a decomposition takes place, giving free hydrochloric acid and a proteid.

The reasons given for this statement are:

1. In the cases of chronic gastritis that I have examined there is a very unstable proteid chlorid (which is not syntonin), which when tested for free hydrochloric acid is negative, but when estimated quantitatively acts just like free hydrochloric acid.

2. Nucleinic acid has a powerful affinity for albumin, and when chlorin is in combination it is discharged as free hydrochloric acid.

3. In the one case of chronic gastritis a reaction was had for free hydrochloric acid, although the reaction of the fluid was alkalin to litmus, phenolphthalein, and lacmoid. The acid could not have been there in the free state, but must have been there in a proteid combination, which when heated very gently decomposed, giving free hydrochloric acid.

4. That the nucleus of the cells in the glands of the stomach take up the chlorids from the blood and combines them with

the pepsinogen and rennet zymogen; this combination remains intact in the glands, but when discharged decomposes into free hydrochloric acid, pepsinogen, and rennet zymogen. The acid thus liberated first acts upon the albumins to form syntonin, and then acts upon the zymogens and liberates them into an active state.

Edwards, Landon B., Richmond, Va.: Gastralgia. (*Richmond Journal of Practice*, Vol. xi, No. 3.)

Neuralgia is met with in three forms in the gastric distribution of the pneumogastric: A sense of constriction of the pharynx, or *globus hystericus;* a burning sensation in the esophagus, or *pyrosis*, ordinarily called *heartburn;* painful sensations in the stomach with neuralgic features, or *gastralgia.*

As to gastric pains, the author refers to the different terms used to describe this condition: *Gastrodynia*, which is used as synonymous for *gastralgia*, is different from *cardialgia.* The former is a scalding, sore, neuralgic pain, originating in the epigastrium, due to acetic or putrefactive fermentation in the stomach contents, usually accompanied by sour, acrid eructations, causing the pyrosis, or heartburn. The latter, *gastralgia*, is a paroxysmal neuralgia of the sensory fibres of the stomach. It varies from a sensation of painful pressure, external pressure lessening the cramp, to an intense pain.

The attack is usually of short duration—an hour or two—generally terminating in vomiting or eructations. True gastralgia occurs mostly in hysterical and anemic subjects, and when it begins after the age of forty it is like an expression of the gouty diathesis or some structural lesion. The following forms are recognized: (1) true or essential gastralgia; (2) gastralgia of neurotic origin; (3) hysterical gastralgia; (4) gastric crisis, in which there is a sclerotic degeneration of the vagus nucleus or the vagus tract; (5) constitutional gastralgias, as due to malarial infection, lead and mercurial poisoning; (6) gastralgias caused by certain stomach diseases, as ulcer, etc.

The following are given as causes of pain in or about the stomach: (1) hyperchlorhydria and periodic hypersecretion; (2) achylia gastrica; (3) chronic gastric catarrh; (4) gastric ulcer; (5) gastric cancer; (6) pyloric stenosis; (7) gastric crises of

tabes; (8) pains in muscles due to rheumatism or overexertion; (9) inferior intercostal neuralgia; (10) angina pectoris; (11) hepatalgia; (12) enteralgia; (13) gall-stone colic, and (14) nephritic colic, all of which must be differentiated from the pain of gastralgia, and can in the main be easily done.

TERVOSS, GEORGE L., INDIANAPOLIS, IND.: TREATMENT OF UMBILICAL HERNIA. (*Indiana Medical Journal*, Vol. XV, No. 10.)

In young children, where there is a protrusion of the bowel through the umbilical ring, we are often called on to correct the defect. There are numerous sorts of apparatus on the market for the correction and cure of umbilical hernia, but in the mind of the writer there is no apparatus or device quite as good as rubber adhesive, or, still better, old-fashioned lead plaster. It has been customary, when using adhesive plaster, to place a button over the site of the hernia, but that is objectionable, as the constant pressure for several months tends to produce what we are endeavoring to overcome—thinning of the abdominal walls at that point. Some time ago Dr. J. H. Oliver, of this city, concluded that the button was unnecessary, and the writer, in three cases, has demonstrated to his own satisfaction that umbilical hernia in children can be cured without bringing direct pressure to bear upon the protrusion, but simply by passing strips of plaster, beginning well back on the sides of the abdomen, from one side to the other, the strips passing each other obliquely over the site of the hernia. This confines the bowel, at the same time bringing the edges of the ring together, giving abdominal walls considerable support, not allowing them to relax to any perceptible extent.

Cases. H. and C. T.—Twins; colored; females. When two months old the mother called my attention to umbilical hernia in both girls. Acting upon the suggestion of Dr. Oliver, I applied four strips of rubber adhesive plaster over each hernia, in the manner described, and at the end of six months there was no trace of hernia in either girl. The abdominal wall seemed as firm at the umbilicus as at any other point, and the ring had disappeared. There has been no recurrence in either case.

H. O.—Male; white. This case came under my observation at the Bobb's Free Dispensary clinic, and was treated by Dr.

Oliver. The boy was about eight months old, and had a marked umbilical hernia. The umbilical ring was large enough to allow the passage of the tip of the forefinger, and the walls were very lax at that point, with a marked protrusion of the bowel. Dr. Oliver treated this case with adhesive strips, and without the button, and the last time the writer saw the case, three months later, the ring was almost wholly obliterated, and there was very little protrusion, even when the patient strained in crying or coughing.

Like Dr. Oliver, the writer has concluded that it is better to bring the edges of the ring together and support them than to bring pressure upon and thin the walls at that point.

Webster, H. T., San Francisco, Cal.: Chronic Gastritis. (*New England Medical Monthly.*)

After a careful resumé of the etiology and pathology of the affection, and an enumeration of the symptoms attending it, he says, in speaking of the diagnosis: "The use of the stomach-tube will afford the best means of diagnosis. If siphonage be practiced an hour or so after eating, hydrochloric acid will usually be absent, and lactic acid associated with fatty acids are present with a large quantity of mucus. If siphonage be practiced seven hours after eating, undigested food will be found still remaining in the stomach, while in cases of functional dyspepsia it will have disappeared. Malignant disease will be excluded by lack of cachexia, absence of perceptible tumor upon palpation, and by the character of the material vomited, coffee-ground material soon appearing in cancer. In gastric ulcer, a diagnostic feature is frequent hematemesis."

He believes that if a proper diet be pursued and rational medicinal treatment be employed almost every case of chronic gastritis will improve readily, unless it be complicated by gastric carcinoma, gastric ulcer, or hepatic, renal, or pulmonary disease. His treatment consists in lavage, disinfection, and cleansing of the viscus with hydrozone. Lavage should be practiced every morning before eating, a small quantity of water (a pint) being used at first, which should be increased to two or three quarts as the treatment is carried on. The water should be warm (98.6°F.), and solutions containing Glauber's salt or boracic acid are often

useful. Regarding the use of hydrozone in this affection, he says:

"The introduction of hydrozone as a remedy in this condition was an innovation of remarkable value. A drachm of Marchand's hydrozone added to four ounces of boiled water and drunk while the stomach is empty exerts a powerful influence in dissolving and removing the tenacious mucus, destroying microbic elements of fermentation, and stimulating normal action in the diseased mucous surface. The best results follow its use in the morning before breakfast, the patient taking it while in bed, and remaining on the left side for ten minutes before rising. It may be taken oftener, but once a day may suffice, and it is advantageously used in this manner after the practice of lavage.

"The hydrozone may at first produce acrid sensations in the stomach, but as the irritated gastric surface improves in tone under its influence, this will pass away and sensitiveness to its action will subside. Where necessary the amount of hydrozone may be reduced until the stomach becomes more tolerant to it.

"The important step in chronic gastric catarrh, as in catarrh of all other mucous cavities, is the cleansing of the part from the ropy mucus, which clogs the glandular organs and serves as a nidus for the operation of agents of fermentation. Glycozone in teaspoonful doses, diluted with water, administered after meals prevents fermentation of food and accelerates a cure.

"If the treatment outlined above be properly carried out, the writer believes that little more is necessary, for with the removal of morbid accumulations the gastric secretions will become normal in quantity and quality. Hydrochloric acid, administered internally, may in some cases do good, as also the bitter tonics, but their place is secondary to the use of the stomach-tube and the disinfection of the mucous membrane of the stomach with hydrozone."

PARSON, W. H., OMAHA, NEB.: SUPPLIED BLOOD IN EXTREMIS.

Miss B., age sixteen, of Lincoln, Neb., was admitted to hospital in Kansas City, Mo., June 9, 1891. Laparotomy for ovarian cyst was performed on June 12th. She was anemic in the extreme when admitted, and generally in bad condition for

an operation, but the case demanded immediate relief and the operation was deemed particularly successful; but the low vitality and extreme nervous irritability of the patient gave no promise of a favorable outcome.

Shortly after the operation the stomach became so irritable that all nourishment and even cold water were rejected. The temperature and other grave symptoms indicated sepsis. On June 18th, the date of my first visit to the hospital, the patient's life was despaired of, and the last rites of the church were being administered at the time of my arrival. Dr. G., the surgeon in charge, kindly gave me a history of the case. Rectal feeding had already been tried with unsatisfactory results, beef tea and milk having been used. At my earnest request I was permitted to test the value of the blood treatment, the doctor saying at the time that the patient would not live forty-eight hours. Bovinine, one ounce, sterilized water, one ounce, pancreatine, five grains, raised to a temperature of 100° F., were employed and forced high up into the rectum. This was retained, and the same dose was repeated after an interval of two hours. After eight hours the distress and painful retching subsided, and if food was not alluded to the stomach remained tranquil. For twelve days the only nourishment administered was bovinine every three hours, day and night, and by this process of nutrition alone the vitality of the patient was restored, so that at the end of that period she sat up in bed and, for the first time since the operation, expressed a wish for food. On July 3d this moribund girl was pronounced convalescent.

M. Chassevant: The Absorption of Iron in the Intestines, and its Relation to the Blood. (*Presse Medicale; New York Medical Journal.*)

In the *Presse Medicale* for February 10th, M. Chassevant states that M. Cloetta has made some experiments in regard to the elimination of iron in the economy. (*Archiv. fur experimentelle Pathologie und Pharmakologie*, 1897.) For this purpose he used ferratin, which exercises no caustic action on the tissues. His experiments demonstrated that in dogs which were subjected to a milk diet the iron injected into the veins in the form of ferra-

tin was eliminated by the large intestine. Quincke had also ascertained this by micro-chemical examination. The author also investigated the means of assimilation of this element when administered by the digestive tract, and he found that twenty per cent. of a dose of ferratin introduced into the stomach of a dog subjected to a milk diet was absorbed.

This confirms the results published two years ago by Prof. Pio Marfori, of Ferrara, namely, that ferratin contains about seven per cent. iron, and that on an average twenty per cent. of ferratin taken by mouth is absorbed for blood supply. This enables the physician to very accurately gauge the dose; if an anemic patient or convalescent takes eight grains of ferratin, three times daily, or twenty-four grains, he receives one and two-thirds grains of iron; if twenty per cent. is absorbed, the system is enriched by about one-third grain iron entering into the blood to enhance hemoglobin and red corpuscles. "There is no danger of overcharging the system with iron," says Schmiedeberg, "inasmuch as absorption and secretion seem to be regulated automatically."

McGuire, Hunter, Richmond, Va.: Appendicitis. (*Southern Medical Record.*)

A series of twenty-six cases was reported, an analysis of which shows that nineteen were of the chronic form, seven of the acute; thirteen occurred in males and thirteen in females; twenty-five recovered and one died.

The success obtained by the writer he considers largely due to the fact that whenever practical he operates in the quiescent stage, when danger of sepsis has passed and inflammatory symptoms have disappeared. In more than one instance he has waited, with some risk to the patient, until the acute symptoms have passed off and sufficient time has elapsed for all inflammation to disappear. The treatment during this period consists in keeping bowels freely open, diet, restriction of exercise by confinement to room or bed, and $\frac{1}{30}$ grain bichloride of mercury three or four times a day.

He is opposed to an operation in all cases as soon as a positive diagnosis is made, as fully one half of all cases recover from the

first attack, spontaneous resolution taking place when peritonitis, exudation, and sometimes suppuration have been present.

When the attack is severe and sudden, the pain intense, pulse rapid, temperature high, respiration short and thoracic, abdomen hard and distended, face pinched and anxious, the one hope for life is an operation, the sooner the better.

In the fulminating cases we are not warranted in waiting an hour for a trial of medicinal measures.

The temperature is no guide, as the effect of the disease on the sympathetic nervous system is so profound as to keep it below normal. The pulse is the important symptom to note, it being small, thready, and frequent—the "abdominal pulse."

A saline purgative in an ordinary case of appendicitis, not a fulminating one, is valuable for good. By it the bowel and peritoneum are "bled" and the congestion lessened.

If the disease continues after purgation, the abdomen is left in better condition for a future surgical operation. If after free purgation the pain continues, the pulse is rapid, and the belly tender, an operation should be done at once.

The writer's experience has not borne out the views of many that males have appendicitis more often than females; in a series of one hundred and fifty-five the cases are nearly equal in the two sexes.

An operation should not be postponed on account of pregnancy should appendicitis develop at this period.

As to the technique of operation when an abscess is present, he advises that the abdomen be opened by a long incision, the appendix cut off, and the abdomen flushed out with gallons of sterile water. The wound should not be sutured.

Deep-seated localized abscess should be rendered accessible by a free abdominal incision, pus sponged out, and the appendix carefully searched for and removed.

In cases where the abscess has approached the anterior abdominal wall and become adherent to the peritoneum, an opening is made for drainage, and no effort made to extract the appendix if not loose, or to remove the wall.

In cases of chronic or relapsing appendicitis, operation is not advised until the patient has had two attacks.

CHENEY, WM. F., SAN FRANCISCO: INTUSSUSCEPTION IN AN INFANT SIX MONTHS OLD; DEATH IN TWENTY-FOUR HOURS. (*Medical News*, Vol. LXX., No. 23.)

The child was a male, six months old, and had been in perfect health previously. After a morning during which he took his food well and had one normal movement from his bowels he began to cry, and shortly vomited freely, and continued to vomit at intervals. Ten hours later, with no other symptom than restlessness, crying, and nausea, he had a movement composed of blood, mucus, and water, but no fecal matter. He was seen at this time for the first time by the author. Pulse 140, temperature per rectum 102.5°. No tumor could be found by careful palpation of the abdomen and of examination per rectum. The diagnosis lay between an acute indigestion and an acute intussusception, "one due to a cause here manifestly present; the other (intussusception) without any cause in the apparent history of the case." An enema of starch-water and paregoric was given, mustard application to abdomen, and withholding of all food save egg-water. The next day patient was decidedly worse; nausea and vomiting continous, but no movements; pulse thready, temperature 105.5°, eyes sunken, and marked pallor. Again examination did not reveal a tumor. Three hours later two bloody movements were passed, and intussusception was diagnosed. High enema availed nothing, and child died. Autopsy revealed ileum pushed into cecum through ileo-cecal valve for three inches, so tightly wedged that considerable force had to be exerted to release it.

Book Reviews.

Lectures on the Treatment of Fibroid Tumors of the Uterus, Medical, Electrical, and Surgical. By Franklin H. Martin, M. D., Professor of Gynecology Post-Graduate Medical School of Chicago, etc. 174 pages. The W. T. Keener Co., Publishers, Chicago, Ill. 1897.

Fifteen years ago fibroid tumors of the uterus were among the opprobria of operative surgery. In the skilled hands of expert abdominal surgeons of that period the mortality was so severe that operative treatment was avoided. Many deaths from hemorrhage and degeneration, as well as much suffering from pressure, constantly occurred, which are now happily prevented by timely and appropriate operative interference. Operations for fibroid tumors of the uterus are now done by gynecologists with results almost if not quite equal to those for cystic tumors of the ovary. This great advance in knowledge has been the work of the past decade, during which time operative methods have been simplified and perfected so as to render this one of the greatest achievements of modern pelvic surgery.

In this little work the author has presented, in practical manner, the best methods of treatment of the several varieties of fibroid tumors of the uterus. Dr. Martin has taken active part in the evolution of the several surgical procedures now applied with such brilliant results, and has done some original work in the conservative surgery of that class of fibroid tumors of the uterus amenable to minor operative treatment. The work consists of a series of lectures, thus rendering the author's style concise and pleasing. In the first lecture the author deals with the anatomy, histology, etiology, and degeneration of the tumors under consideration, but only as a brief introduction to the work. The bulk of the volume relates to treatment. This subject is divided into three parts: medical, electrical, and surgical. Of course the chapters devoted to medical and electrical treatment have little value beyond their historic interest; such methods of treatment having practically been demonstrated to be useless. More than one half of the book is devoted to the surgical treatment, and it is apparent that the author regards this the essential

part of the task undertaken. This part of the subject is considered in detail, not only as to the various operative procedures as adapted to the several varieties of fibroids, but every item of the operative technique. The value of the work is very much increased by the author's individual experience, presented in the form of clinical reports.

This work is not pretentious and can not be regarded as a complete treatise upon fibroid tumors of the uterus and their treatment. Such a treatise, in view of the great varieties clinically presented by these growths and the numerous operations adapted thereto, together with complications innumerable, would make a work far beyond the limits of the volume before us. The author has set for himself a more modest task, that of a series of lectures, dealing in a general way with the treatment of this class of neoplasms of the uterus. The work will be especially welcome to the general practitioner, and will acceptably fill the place for which it is intended. L. S. MCM.

The Diseases of the Stomach. By DR. C. A. EWALD, Extraordinary Professor of Medicine at the University of Berlin, Director of the Augusta Hospital, etc. Translated and edited with numerous additions from the third German edition, by MORRIS MANGES, A. M., M. D., Assistant Visiting Physician to Mount Sinai Hospital, Lecturer on General Medicine at the New York Polyclinic. Second revised edition. New York: D. Appleton & Co. 1897.

The first edition of this work was in 1892, and the present volume is based upon the third German edition, published in 1893. So many details of diagnosis and treatment have been devised since that date that numerous additions have been made to the original by the translator, making it thoroughly up to date. We have seen few works which will be of as much use to the practitioner because of the practical, thorough, yet concise method used in giving the various methods of diagnosis, and the chemistry of the clinical investigations. This, of course, will be of inestimable value to the student as well; but it is to the general practitioner that this special feature will appeal.

In this connection it is of interest to note the author's views in regard to the adoption of "Diseases of the Stomach" as a legitimate special field for practice. In fact they are so important that they are given *verbatim:*

"Throughout this work I will be able to show that the technique of the methods which are in use is by no means difficult to carry out. . . . To obtain and to analyze stomach contents does not lie beyond the scope of the dexterity and ability which every physician ought to possess. . . . In the course of this book it will be seen how closely the diseases of the stomach are related to those of other organs, how complicated this relation is, how often the symptoms are deceptive, how frequently in an apparent stomach disorder entirely different organs are really involved. Hence it is my firm conviction that *it is impossible to find truly profitable and special occupation in the treatment of the diseases of the stomach alone, because the field is too small and the technique is so easily learned and is so limited in its scope.*"*

One of the most interesting chapters in the book is that on gastrectasis, and especially that portion devoted to treatment. The author does not consider it so formidable a condition as do most authors on the subject. He advises, first, the regulation and limitation of the diet; hydrochloric acid; lavage—*the sovereign remedy;* massage and faradization. The surgical treatment of this condition is taken up also.

In detail and as a whole the book is a most excellent one, an improvement, decidedly, over the former edition. It will no doubt command a place at once as a standard reference and text-book.

Hemorrhoids and other Non-malignant Rectal Diseases. Diagnosis and Treatment. By W. P. Agnew, M. D. Third edition. San Francisco: Pacific Press Publishing Company. 1896.

This little book, of two hundred and nine pages, is not intended by the author as an elaborate treatise on diseases of the rectum. There is very little pathology given, and many subjects of great importance to the surgeon are omitted. Whereas there are many expressions in it that might be criticised from a scientific point of view, it is nevertheless well written and valuable to the physician who desires to look up the literature pertaining to these diseases. It is to be regretted that a work like this, which is to be read by the profession indiscriminately, should advocate so unsurgical, unscientific, and nearly obsolete a method of treating piles as the carbolic-acid injection plan. Its inefficiency and dangers have been exposed time and again by distinguished men, and to read it now makes the motive questionable. Even those surgeons who were enticed into a trial of this plan soon saw the evil results and abandoned it. The book is printed in clear, good type, and is well illustrated.

*Italics Ours.

Syringomyelia. By GUY HINSDALE, A. M., M. D., Assistant Physician to the Orthopedic Hospital and Infirmary for Nervous Diseases, Philadelphia; Attending Physician to the Presbyterian Orphange and to the Out-Patient Department of the Pennsylvania Hospital in Philadelphia, etc. Philadelphia: P. Blakiston, Son & Co. 1897. 74 pages. Large 8 vo. Cloth, $1.

The essay was awarded the Alvarenga Prize of the College of Physicians of Philadelphia in 1895. It is based upon a study of one hundred and eighteen cases published since 1890. The essay has been published in the *International Medical Magazine*, and is familiar to neurologists. The symptoms, pathology, and diagnostic points of this interesting and until recently poorly understood disease are now well known, and new cases are being brought to light. The author performed his task well, and deserved the prize. The bibliography is very full, containing more than five hundred references. The volume will prove of value to all students of neurology. J. B. M.

Hysteria and Certain Allied Conditions. By GEORGE J. PRESTON, M. D., Professor of Diseases of the Nervous System, College of Physicians and Surgeons, Baltimore, etc. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1897. 298 pages. 8 vo. Price, $2.00.

The author has given us an interesting and valuable monograph on a very common but often a very puzzling disease; one frequently misunderstood and always difficult to manage. The work is especially directed to the general practitioner, and the symptomatology and diagnosis of hysteria are given in a concise manner, and the various therapeutic measures, including the rest cure, massage, electricity, etc., that have been found of value in the treatment of this disease are clearly and fully set forth. The work is illustrated with beautiful drawings from Richer, and diagrams from Gilles de la Tourette and Charcot. A large amount of literature on hysteria has been reviewed. The practitioners will find this work of distinct value, throwing light on many obscure cases. J. B. M.

The International Medical Annual and Practitioner's Index, a Work of Reference for Medical Practitioners. 1897. Fifteenth year. New York: E. B. Treat. Price, $2.75.

The most excellent plan pursued by the publishers of this book, of combining with the splendid review of current medical literature for the year special articles by European and American authorities on timely subjects, has made the *Annual* always welcome and popular.

The present volume is up to the former numbers, contains 724 pages, and is splendidly indexed, which with the alphabetical arrangement of the subject-matter makes it an ideal reference book.

Notes and Queries.

MAN'S MOST VULGAR HABIT.—"If men were compelled to wear skirts for a period I think they would insist more than they now do that their fellow-men should stop the nasty habit of spitting in public," writes Edward W. Bok in the May *Ladies' Home Journal.* "There is no practice of man which is more distressing to women than this disgusting habit. Women constantly complain of it, especially in our larger cities, where sometimes the sidewalks are scarcely fit for them to walk upon. They revolt at the practice, and they are right in so doing. Yet year in and year out the habit not only continues but increases, and the protection of cleanliness, to which every woman walking upon our streets has a perfect right, is denied her. In New York City the Board of Health has taken the matter up on the grounds of public health, and the police department is lending its co-operation in the enforcement of an ordinance directed against the evil. No action taken in New York for years is so highly to be commended, and the ordinance should quickly extend to other cities and be put into force. It is an undertaking which public opinion will sustain in whatever part of the country it is attempted. Every community should be urged to try the experiment. . . . The time is ripe when every decent man should take some steps to see to it that the nastiest and most vulgar of all American habits should be entirely stopped. New York City has started the reform. Let the Boards of Health of a few of our other large cities take up the question, and the reform, which appeals to every clean-minded man and woman, will soon spread. It is a work in every way calling for the attention and action of Boards of Health, and all bodies and citizens interested in the health of communities. The spitting habit is an absolute menance to the public health. . . . Smaller communities need not wait for the larger cities. The decent men of the smallest community can come together, awaken interest in the matter, and see that a prohibitive ordi-

nance is passed. And if the men are slow in seeing their duty, it is to be devoutly hoped that the women will take the question in hand and see to it that this disgusting habit receives that necessary public attention which it has lacked in the past."

Mr. W. B. Saunders, Publisher, of Philadelphia, announces the following books in preparation for early publication:

"An American Text-Book of Genito-Urinary and Skin Diseases." Edited by L. Bolton Bangs, M. D., Late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital, and William A. Hardaway, M. D., Professor of Diseases of the Skin, Missouri Medical College.

"An American Text-Book of Diseases of the Eye, Ear, Nose, and Throat." Edited by G. E. de Schweinitz, M. D., Professor of Ophthalmology in the Jefferson Medical College, and B. Alexander Randall, M. D., Professor of Diseases of the Ear in the University of Pennsylvania and in the Philadelphia Polyclinic.

"MacDonald's Surgical Diagnosis and Treatment." By J. W. MacDonald, M. D., Graduate of Medicine of the University of Edinburgh; Licentiate of the Royal College of Surgeons, Edinburgh; Professor of the Practice of Surgery and of Clinical Surgery, Minneapolis College of Physicians and Surgeons.

A Text-Book of the Theory and Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia.

Tuberculosis of the Genito-Urinary Apparatus, Male and Female. By Nicholas Senn, M. D., Ph. D., LL. D., Professor of the Practice of Surgery and of Clinical Surgery, Rush Medical College, Chicago.

A Text-Book of Gynecology. By Charles B. Penrose, M. D., Professor of Gynecology, University of Pennsylvania.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M. D., Professor of Obstetrics, University of Pennsylvania.

A Manual of Orthopedic Surgery. By James E. Moore, M. D., Professor of Orthopedics and Adjunct Professor of Clinical Surgery, University of Minnesota, College of Medicine and Surgery.

A Text-Book of Embryology. By John C. Heisler, M. D., Prosector to the Professor of Anatomy, Medical Department of the University of Pennsylvania.

Pathological Technique. By Frank B. Mallory, A. M., M. D., Assistant Professor of Pathology, Harvard Medical School; Assistant Pathologist to the Boston City Hospital; and James H. Wright, A. M., M. D., Instructor in Pathology, Harvard Medical School; Pathologist to the Massachusetts General Hospital.

New Volume in Saunders' Aid Series. Diseases of Women. By J. Bland Sutton, F. R. C. S., Assistant Surgeon to Middlesex Hospital, and Surgeon to Chelsea Hospital, London; and Arthur E. Giles, M. D., B. Sc., Lond., F. R. C. S., Edin., Asst. Surgeon, Chelsea Hospital, London.

After having been located at or near Broadway and Eighth Street for more than a quarter of a century, in harmony with the trend of the times the well-known firm of E. B. Treat & Co. have moved to their new building, at Nos. 241 and 243 West Twenty-third Street, near Seventh Ave., New York City.

Mr. Treat's sons will in the future be associated with him. Among the books now in press may be mentioned: Illustrated Skin Diseases, by W. S. Gottheil, M. D., New York. Surgery of the Chest, by Stephen Paget, M. D., London. Diseases of the Nose and Throat, by P. Watson Williams, M. D., London.

The Quarterly desires to call attention to the clubbing rates offered with the American Practitioner and News and the Louisville Medical Monthly:

The Practitioner and News, a bi-weekly journal, with the Quarterly to one address, $4.00.

The Louisville Medical Monthly and the Quarterly to one address, $2.40.

It is announced that the College of Physicians and Surgeons of Chicago has recently become the Medical School of the University of Illinois.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"ALIS VOLAT PROPRIIS."

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Original Contributions.

CYST OF RECTAL WALL: INGUINAL COLOTOMY IN AN INFANT.

BY JOSEPH B. BACON, M. D.,

CHICAGO.

Miss C., aged twenty-six, single. In good health until three years ago, then she began having an obscure pain in the back and pelvis which was intermittent in character. From time to time this pain became more and more severe until, during the past year, she was quite an invalid and was compelled to give up her employment on account of the intense pain, and she had become a neurasthenic, so that she was really an invalid. Quite a number of physicians and surgeons had examined her to find out the cause of the pain without success, until finally she consulted a gynecologist, who decided that the seat of pain was in her right ovary and that the backache and the obscure pelvic pain were reflexed from this center of trouble. He advised an abdominal section and the removal of the ovary, which was successfully carried out, the ovary proving to be somewhat cystic. After the patient recovered from this operation she found that her old pain was present, and from month to month it increased in severity, being more pronounced in the rectum.

Several previous examinations of the rectum had failed to disclose any disease. But now, upon a more careful digital examination, a tumor was discovered within the rectum upon the

posterior wall, and the patient was referred to me for operation. I first examined the patient at my office and found upon the posterior rectal wall a cystic tumor lying under the mucous membrane in the submucous connective tissue space, the lower border of the tumor being about two inches above the internal sphincter muscle and the upper border beyond the reach of the finger. The sac of this cyst was not distended with fluid, and by any ordinary examination with the speculum one would naturally have failed to recognize the fact that the tumor was present, and only by a digital examination, where the tumor could be felt as the finger was withdrawn, so as to force the fluid down into the lower part of the cyst, thus making it tense enough to feel, would the tumor be found at all.

I sent the patient to the Woman's Hospital and had her prepared for an operation. On February 18, 1897, assisted by Drs. Willits and Osborne, the house staff, the patient was thoroughly anesthetized and the sphincters carefully and thoroughly divulsed, and then, by passing two fingers deep into the rectum and forcing the contents of the cyst into the lower part of tumor, I was then enabled to drag down the growth within sight and near the anal outlet. With the fingers now holding the tumor tense in this position, I used the Paquelin cautery and made a linear incision over the cyst wall, cauterizing only through the mucous membrane, so as to avoid the oozing of blood and soiling of the submucous connective tissue, thereby obscuring the sac and making it impossible to do careful dissecting in removing the tumor, as I very much desired to remove the sac without rupturing it. After exposing the sac with the cautery I substituted the scalpel, and by carefully dissecting through the numerous bands and connective tissues and nerves that were drawn tightly over the sac, I was now enabled, with the gauze sponge, to dissect back the several bands of connective tissue and thus enucleate the entire sac without rupturing it. The edges were now closed with catgut sutures and the rectum partially packed with iodoform gauze. The patient made an uninterrupted recovery, the wound healing beautifully with a very minimum amount of scar tissue to be felt afterward. I took this cyst to the Post-Graduate Medical School and gave it to Prof. Klebs for an examination. On

measuring the contents he found it to contain over two ounces of fluid, and, by microscopic examination of the contents and the cyst wall, he pronounced the cyst to be a mucous one. These growths, and especially of this size, are extremely rare within the rectum, this being the first one of the kind that I have ever seen. After the wound in the rectum had healed all the symptoms of former pains disappeared, and now, six months after the operation, the patient is entirely free from her former pelvic pains.

This case is very interesting in the fact that the reflex character of the pain goes to prove how little significance pain is as a factor in locating or diagnosing a disease of the pelvis; as the same nerves supply all the organs within the pelvis, any branch of these nerves being involved in a disease, the pain may be reflexed off into some adjacent organ entirely separate from the one diseased. In this case it is valuable as calling our attention to the importance of recognizing this fact and not sacrificing any pelvic organ until after a most painstaking and careful differential diagnosis is made of all the organs contained within the pelvis. In dissecting out the tumor there were numerous bands of submucous connective tissues and nerves tightly drawn over the tumor, and as the tumor had, month after month from its beginning, increased in size, these nerves had been stretched more and more, thereby increasing the neuralgia and the reflex symptoms.

Case 2. *A case of inguinal colotomy successfully performed upon an infant of forty-eight hours, in June,* 1897. Dr. J. A. Lyons, of Chicago, called me to see this infant that was born with an imperforate anus. The doctor had made an incision through the skin and connective tissue, over the region where the normal anus should be, without finding the intestine. He called upon me to perform an operation and try and find the intestine; if not, to do a colotomy. The little patient was in a most pitiable condition, the abdomen enormously distended, with quite an elevation of temperature. After the doctor chloroformed the patient I increased his incision and carefully dissected up along in front of the coccyx, as far as I could dissect and see what I was cutting into, a depth of an inch and a half or two inches without finding the intestine. Realizing the danger of dissecting beyond

where one could see the point of the knife, I determined not to run any risk in that method, not knowing where the end of the intestine would be found, and therefore I decided upon an immediate inguinal colotomy that would give temporary relief to the child, or permanent relief if we so desired after further searching at some future time for the end of the intestine. It is now three months since this colotomy was made. The child has made wonderful progress, and is a large, healthy, fat boy. To look at it, you would think it the picture of health.

A loop of intestine was not withdrawn to make a permanent colotomy, as I intend later to probe with a bulb-pointed director through the colotomy wound into the colon and thereby the lower end of the colon and determine whether it would be practicable to try and make a deeper incision through the perineum and bring the intestine into its normal position. I purposely recommend not withdrawing a loop of the intestine, but to only sew the edges of the colon to the skin, thereby leaving a fecal fistula that will prolong the child's life and will close itself, or can easily be closed providing the intestine is brought down later and the anus made in the normal position. This will not require for its closure a second laparotomy with its accompanying danger, as the tendency will be for the fistulous tract to close itself, and the difficulty will be to keep it open long enough if the patient's general health demands that a permanent operation be postponed for some time.

The statistics of operations for imperforate anus are very discouraging, as it has been a rule for most of these operations to terminate fatally. The statistics of colotomy upon these young infants show that the operations have almost been as fatal, so that when one succeeds in doing a colotomy upon so young an infant with satisfactory results, he naturally feels greatly pleased. I am thoroughly convinced that the most of the cases of these young infants that have died from colotomy, and have died from operations through the perineum in trying to find the intestine, have been killed through meddlesome or so-called courageous surgery, and I am thoroughly convinced that the thing to do in such cases, where there is not either a bulging of the perineum denoting that the intestine came down very nearly to the normal outlet, or after making an incision in

the normal position in front of the coccyx only to such an extent as you can yet see and know positively what tissues you are cutting, and not opening up blindly into the peritoneal cavity, that the proper thing to do in all such cases is to make a small inguinal incision and sew the wall of the colon to the skin and make a temporary fecal fistula. Thus, after the patient has become several months older and much more capable of standing a thorough operation, we can by probing through this fistula into the colon determine whether the lower end of this intestine can possibly be drawn down and placed in the normal position; if not, the cicatrix about the fecal fistula can be removed and the fistula enlarged into a permanent inguinal colotomy with the very minimum of risk, and thereby we will be able to reduce the mortality of these cases from something like ninety-eight per cent. to a very low and favorable percentage.

ATONY OF THE RECTUM.*

BY DR. GEORGE ACHESON,
GALT, ONTARIO, CANADA.

The act of defecation is partly voluntary and partly involuntary, the voluntary part being pressure on the colon by the abdominal muscles, the involuntary being presided over by a nervous center in the spinal cord. The sigmoid is not affected by the pressure.

The peristaltic movement of the colon sends the feces to the sigmoid flexure, the presence of the mass in the rectum stimulates the sensory fibers of the rectum, and the sensation is carried to the cord; a motor influence results, being carried to the unstriped muscular fibers of the rectum.

Atony of the rectum is commonly spoken of as rectal constipation. Constipation means "cramming together," and when this takes place sensibility is obtunded. Atony is a result of constipation; and among other causes may be mentioned sedentary life, disregard for nature's calls, continued use and abuse of large enemata of warm or hot water. Cold water is not so bad, but the daily use of it tends to paralyze the muscular wall.

*An abstract of a paper read before the Section on Medicine of the British Medical Association, Montreal, September 1, 1897.

Effervescing waters used to excess may be mentioned as a cause; also the pressure of the child's head during delivery. The subjective symptoms are a fullness in the region of the rectum, but it is impossible to evacuate it. Often there is no desire, and frequently there is a faintness when it is empty, remaining until it is again filled.

Auto-intoxication, causing headache, hysteria, hypochondriasis, deranged stomach, gout, and rheumatism may be mentioned as causing harm. Among the mechanical effects may be mentioned uterine displacement, a degeneration in rectum, atrophy of the muscle and congestion of the folds of mucous membrane.

The diagnosis is based on the causes given and the present condition of the patient, and is usually confirmed by a digital examination. Enemas given are frequently retained entirely.

For treatment was mentioned coarse foods, exercise, bathing, hot water, regularity in massage, removal of cause, whether it be to replace a uterus or to remove a pelvic tumor. Purgatives are not administered as a routine; a nervo-muscular tonic is used in the form of strychnia. The following prescriptions are recommended:

℞ Aloin ..... gr. $\frac{1}{5}$
Strychniæ ..... gr. $\frac{1}{50}$
Ext. belladonna ..... gr. $\frac{1}{8}$
Rectified spirits ..... gr. $\frac{1}{8}$
Ipecac ..... gr. $\frac{1}{10}$
M. Ft. pil. Sig.: One night and morning.

Small injections of cold water, or small injections of glycerine, a glycerine suppository, a tonic injection of tannic acid, may be used, or an injection composed as follows:

℞ Rhatany ..... ℥ii
Rectified spirits ..... ℥ii
Aquæ ..... ℥iv

The distended rectum, if filled with feces, may have to be emptied by mechanical means, afterward washed out by an antiseptic douche.

Dr. Tyson, of Philadelphia, in the discussion stated that the habitual use of enemas was a positive cause of atony of the rectum, as he had recently a case due to this; it is often most mischievous in its effect.

SPECIAL CARE OF SPHINCTER ANI IN OPERATION FOR FISTULA.

BY N. H. HENDERSON, M. D.,
Surgeon, Lakeside Hospital.
CHICAGO, ILL.

I wish to call special attention to the care of the sphincters in the surgical treatment of fistula, which I am disposed to regard as the only rational treatment. Internal complete fistula, the variety of most frequent occurrence, usually has its internal opening just between the internal and external sphincters. Owing to the resistance of the muscular fibers its course is generally downward and under the external sphincter. Our textbooks, ancient and modern, tell us that the way to deal with this condition surgically is to introduce a probe or grooved director, drag the inner end out, divide the tissues down to the sinus and cut it out. In so doing we must divide the sphincter; if more than one sinus we divide it more than once, thereby destroying the function of the muscle, perhaps partially, perhaps altogether.

The surgeon who has been called upon to *repair* a sphincter left in this condition will testify to the hopelessness of the situation. In order to avoid this most distressing result I have for some time had recourse to a different procedure, a description of which may prove helpful to some one. In preparing the patient for operation I administer a liberal cathartic about twenty-four hours previously, following up with enemata. After the patient is anesthetized I dilate the sphincters thoroughly, using the Pratt bivalve speculum for this purpose. Then, the sphincter being well relaxed, I introduce a probe into the sinus to locate its course and internal opening. I then make an incision about one inch long and about one half inch or three fourths of an inch deep on each side of the external opening, but not through the sinus. These incisions must run longitudinally with the fibers of the sphincter, care being taken not to wound the muscle at any time. This done, grasp the end of the sinus with forceps, and with scissors or dull spud dissect it out intact; then evert the external sphincter, drag down the internal opening, and with fine catgut carefully approximate the membrane; then take a

deeper stitch which will include the field just closed. Thus the inner opening is effectually closed.

Now wash out the wound with sterilized water, and with a few deep stitches of silkworm gut close the external wound, placing a bit of gauze between two stitches for drainage. In the event of more than one sinus the procedure is more difficult, but if we remember that the sphincter ani arises from the tip of the coccyx by a narrow, tendinous band, and from the superficial fascia in front of that bone, and is inserted into the tendinous center of the perineum, joining with the transversus perinei, the levator ani, etc., we can, if necessary, completely loosen the sphincter from perineum to coccyx, and dissect out the sinuses beneath it, and if in an extreme case it becomes necessary to divide the sphincter to reach the seat of the trouble, let it be done at the posterior median line, where the fibers come in from either side to form a tendinous attachment. This done, the muscle can be laid bare, the sinus removed, the muscle returned and stitched to its proper place.

Dress with boracic acid and sterilized gauze. About thirty-six hours after operation administer a mild laxative followed by a liberal enema when bowels are about to be evacuated. The patient must be kept in a recumbent position until union is established.

This is a rather more difficult method than that to which we have been accustomed, but I have made the operation in this way repeatedly during the past two years, and in every case have felt amply repaid for the extra trouble.

Gastro-Intestinal Disease.

ETIOLOGY AND DIAGNOSIS OF ULCER OF THE STOMACH.

BY WALTER BRADFORD METCALFE, M. D.,

Professor of Diseases of the Stomach, West Chicago Post-Graduate School and Polyclinic; Professor of Diseases of the Stomach and Intestines, Jenner Medical College; Superintendent of the Lake Geneva Sanitarium; Member of Wisconsin and Illinois State Medical Society, etc.

CHICAGO, ILL.

Ulcer of the stomach or chronic ulcer of the stomach, or chronic eroding gastric ulcer, so-called in contradistinction to the superficial ulcers which are often found in catarrhal inflammation of the gastric mucosa, also the acute ulcers produced by the action of corrosive poisons.

This form of ulceration of the stomach is of frequent occurrence, being present, according to Brinton, in about five per cent. of deaths arising from all causes. The size of the ulcer is usually quite small; frequently it occupies less than a square inch of the gastric surface, but in some cases much larger areas have been involved.

The ulcers are usually round or oval, and when of recent formation the edges are sharp, and the sore looks as if a portion of the mucous membrane had been punched out, but when the ulcer has lasted for some time the edges are hard, callous, and adhere to the subjacent tissue. Seldom is there exhibited any surrounding zone of inflammation and exudation. Sometimes it penetrates no deeper than the muscular coat, which may then appear as if cleanly dissected out upon the floor of the ulcer, but it may perforate the different layers of the gastric wall, one after another, until it bursts through the serous covering of the organ. The form of the ulcer is funnel-shaped, with the point of the funnel directed toward the outer surface, thus lessening in diameter as we approach the outer surface of the stomach. The apical point is not always in the center of the crater, but is displaced to one side or the other. When the ulcerative process

approaches the serous covering of the stomach, an adhesive peritonitis is set up and the gastric wall at that point becomes adherent to some neighboring organ. In this way is prevented the passage of gastric contents into the peritoneal cavity; but it may happen that the ulcer may continue to eat its way into the adherent organ, and may thus finally open a communication between the stomach and the intestines, or the gall-bladder, or the pleural cavities, or the external world through the abdominal wall. In certain cases the adhesive inflammation may be sufficiently extensive to produce an encapsulated peritonitis, forming outside of the stomach an abscess cavity into which the ulcer opens. This cavity may in its turn become connected by an ulcerative opening with other organs and cavities of the body, so that a long, fistulous track will be found between the cavity of the original gastric ulcer and its distal opening. In this way a subphrenic abscess, or even a pyo-pneumothorax may be formed.

In this connection it is worthy of note that these remote connections are more liable to occur when the ulcer is situated in the posterior walls of the stomach. When placed in the anterior walls, or in the cardiac portion of the interior walls, a portion of the organ directly opening into the peritoneal cavity usually occurs because the great motility of the anterior surface of the stomach and of the abdominal walls prevents the formation of protective adhesions. These gastric ulcers are most common in the pyloric regions, being situated on the posterior surface and near the smaller curvature. When two are present it is not unusual to find them opposite to each other, as though they had both been produced by the same irritation. When an ulcer exists in the duodenum it is very common to find one also in the stomach. The most common cause of death in ulcer is perforation of all the coats of the stomach. This occurs most frequently into the peritoneal cavities, and consequently produces severe peritonitis. In other instances we may find the ulcer causing a large vessel to be laid open, thus causing hemorrhage. It is confined to the stomach cavity. We can see by this that hemorrhage is more common than perforation. Ulceration may produce death by alteration in the shape of the stomach, this being produced by cicatrization. It may also be caused by great dilatation, from great thickening at or near the pyloric orifice, produced

by an old ulcer. The healing process is, however, sometimes so perfect that the presence of cicatricial tissue may be easily overlooked by the most experienced observer.

When adhesive peritonitis has also existed the resulting connections may additionally hamper and deform the organ, and may become the cause of internal hernia and other fatal accidents.

Etiology. The age of the individual is allowed by all observers to be one of the chief predisposing causes of gastric ulcer. Where the functions of the stomach are most actively performed, as in childhood, it is scarcely ever met with ; it becomes gradually more frequent as age advances. It is worthy of note that by far the greater number are encountered in the female sex, the most common period being from fifteen to thirty years of age. It is during the life period when women are most liable to chlorosis. Another cause of gastric ulceration is to be found in the chronic infectious diseases, such as syphilis, tuberculosis, and chronic malarial poisoning. It is probable that it sometimes is dependent upon those forms of auto-infection that produce disease of the arterial wall. Other exciting causes of the disease are local injuries to the gastric wall, either by blows or pressure from without, or swallowing corrosive or overheated substances, fragments of bone, nuts, shells, and other insolubles introduced with the food, but it is probable that those agents do not ordinarily suffice to excite any thing more serious than erosions of the mucous membrane, such as is often found in catarrhal inflammations of the mucosa, unless there be also a morbid condition of the walls of the blood-vessels that lie in the coat of the stomach. It has been shown by numerous experiments that interference with the normal circulationof the blood in the gastric vessels will cause ulceration in the territory of the obstructed artery. When blood ceases to flow through the capillary network, it can no longer maintain that alkalinity of the tissues which appears to be the neutral opponent to the corrosive action of the acid gastric juice, consequently injuries sufficient to arrest the circulation in a given portion of the gastric wall may occasion the formation of an ulcer.

Ulcers are apt also to occur when the general circulation of the stomach is impeded. Some authors are fond of pointing out that ulcers of this character are confined to the stomach and duodenum where an acid secretion comes in contact with the

tissue, while in the remaining parts they are rarely discovered; hence it has been assumed that they are dependent in some way or another upon the solvent action of the gastric juice, and the discovery that there is usually an excess of free hydrochloric acid in case of ulcer of the stomach has been supposed strongly to confirm this view, but although there is no doubt that the gastric secretion is capable of dissolving any portion of the mucous membrane that has lost its vitality, there is no proof that any excess of acid is able to produce an ulcer so long as the structures are in a normal condition. The various hypotheses that have been invented to account for the production of gastric ulcers are too numerous to mention here.

The co-existence of various diseases with chronic gastric ulcer, or round ulcer, has attracted less attention than it deserves, as the subject is most important both in prognosis and in treatment. In the cases recorded at the London Hospital more than half presented some other visceral affection. The records showed the most common to be cirrhosis of the liver; second, valvular disease of the heart; third, other cardiac diseases, granular diseases of the kidneys and other renal disorders, atrophy of the spleen, tubercular diseases of the lungs, and other forms of phthisis. All these should be looked for as associates of gastric ulcer of the stomach.

Duration of the gastric ulcer is exceedingly variable; sometimes perforation speedily follows, but in rare instances the symptoms of ulceration persist for almost a lifetime. In such chronic cases, as old age comes on, there is reason to fear the development of cancer in the margin of the ulcer or upon its scar, if cicatrization has already occurred. The effect upon the general health is also variable. In many cases there is no loss of appetite or strength, and the patient may lose but little in weight. Frequently, however, there is emaciation, loss of strength, and the sufferer becomes haggard and worn in appearance from loss of sleep and continual suffering. The temperature of the body rarely indicates any disturbance, and the urine remains without noticeable change. The bowels are frequently constipated.

Microscopical examination of the blood enables us to throw a great deal of light upon our case. A severe anemia is common.

We find less than fifty per cent. of hemoglobin, and the red cells are greatly diminished in number, being often less than three million red cells per cubic millimeter. There is no single disease, so far as I am aware, in which the red cells are apt to be as low, except pernicious anemia. Even cancer as a rule does not fall so low. This is due in part, no doubt, to the frequency of hemorrhage from the ulcer, but it is not uncommon to see marked cases of anemia from patients suffering from gastric ulcers who have never had a hemorrhage. The anemia is as much the cause as the result, most probably more so. This anemia is all the more striking when we remember that the frequent vomiting from which most patients suffer tends to concentrate the blood, increase the number of cells in a drop, and so to make the blood seem less anemic than it really is. It is in such cases that the estimation of the dry residue of the blood serum would be of real value could it be made short and simple enough for clinical work.

Symptoms. As is well known, most gastric ulcers, round ulcers that heal by cicatrization, run their course during life without presenting any change whatever, or only a few which are not all characteristic. They are only found then after death. The pain is by far the most constant and prominent symptom of ulcer of the stomach. At first it is only a feeling of uneasiness after food, but as time goes on it increases in constancy and severity. It commences shortly after food and persists during the whole time of digestion, or until the contents of the stomach are ejected by vomiting. Sometimes it begins as soon as the food is taken, but more generally after an interval of twenty minutes. The pain is usually relieved by the recumbent position, but in some cases the patient finds relief by bending the body over a chair. In some cases, especially those of the large ulcers, the pain may not be so severe. This is, however, referred to one spot, or it is usually situated in the epigastric region.

In a considerable number of cases pain is experienced in the back, usually at a point between the last dorsal and first lumbar vertebræ. The pain may be very constant for two or three days and then subside for a time. These exacerbations are chiefly observed in very chronic cases; they probably point to an extension of the ulceration, for they not infrequently precede hemor-

rhage and ulceration and perforation. In almost every case there exists tenderness on pressure over the seat of the sore. This may be so great that the patient is unable to bear his clothing moderately tight. The tender part is, as a rule, opposite the place to which the pain is referred, and can often be covered by the finger end. We must rely to a great extent upon the characteristic character of the pain, for it is one of our strongest points with which to make a diagnosis. For general tenderness is no test of an ulcer, as it is often present in a congestive liver, gastric catarrh, and other complaints of the epigastric regions. It is necessary to be careful in testing for the existence of a gastric ulcer by the finger, for a very light pressure often effects to bring on a paroxysm of pain, even when the stomach is empty of food. The second very important symptom is vomiting. When present it will enable us to make a diagnosis without looking for any other symptoms, if we note carefully the time and character of the vomit. It seldom occurs directly after food, as is often the case in cancer. It is preceded by nausea and not infrequently by a copious flow of saliva, and when vomiting occurs it will usually relieve the pain by freeing the stomach of its irritation. The tongue is usually red; this is especially true if there be gastritis. Flatulency is not a common symptom, inasmuch as the amount of food taken is limited on account of the pain produced by it.

Physical Signs. In a recent case of gastric ulcer we can expect no assistance from the physical signs, but where the disease has lasted for some time evidence of adhesion can be detected. Adhesions may be suspected when it is found by auscultatory percussion that only a small portion of the stomach is in position with the abdominal walls, and more especially if this part is the tender spot and does not vary in position in different states of distension of the organ. Again, if the stomach is found to be of considerable size when empty and its extent is not increased by food, we may suspect that its motions are trammeled by adhesions, and the microscope affords but little assistance in a detection of gastric ulcers, because the extension of this disease is usually very slow, and we therefore have little chance of discovering portions of the mucous membrane in the vomited matter. One of the most important points is the absence of tumor on palpation. No doubt in some instances the ulcer is accompanied

by a certain amount of thickening, but it is only in rare cases that this can be discovered by the hand.

Diagnosis. It is generally said that ulcer of the stomach, gastric ulcer of the stomach, may be confounded with colic rising from gall-stones. In ordinary cases, when a chlorotic young woman complains of severe, persistent, and narrowly circumscribed pain in the epigastric regions, and when this pain is accompanied by vomit of highly acid substances and hemorrhage of the stomach, the diagnosis is comparatively easy; but when these symptoms are not all present, it is often difficult to exclude the possibility of other disease, such as gastralgia, a chronic catarrhal gastritis, gastric carcinoma, and biliary colic. In cases of simple gastralgia there is no increase of pain after eating. Some of the characteristic symptoms: (1) Dry tongue with a white stripe down the middle, or smooth and moist, or slightly coated. (2) Belching rare, or sour regurgitation with heartburn. (3) Taste unchanged. (4) Appetite good between the attacks; thirst. (5) Burning in the stomach; circumscribed boring pains, frequently radiating to the back. (6) Pains rare when the stomach is empty; chiefly after eating, or after movements of portions which cause traction on the stomach; increased by pressure. (7) Digestion of starchy foods frequently retarded; digestion of meat normal, or even too rapid; hyperacidity the rule. (8) Vomiting usually within a short time after eating; frequently the first symptoms of the disease. Very rarely hyperacid vomiting from an empty stomach. (9) Vomiting of clear blood or of coffee-ground masses, as a rule frequently repeated within a short time, at times profuse (very profuse), with intense anemia and collapse. Comparatively rapid recovery. Bloody stools. (10) Stools variable, diarrhea due to intestinal irritation not uncommon, lienteric diarrhea after perforation into the colon. (11) Slight febrile movements, but only in the presence of adhesive inflammation caused by perforation of the ulcer, or in connection with large hemorrhages. (12) Complication anemia, especially is this so after severe losses of blood. Frequently the visible mucous membranes, and even the chiefs, are slightly cyanotic. Another group of patients is chlorotic. (13) Most frequently in middle-aged patients, rare in children; spirits variable, frequently much depressed. (14) Round, egg-shaped tumor

to the right of the middle line, if the ulcer is situated at the pylorus, and is followed by hypertrophy. In old ulcers with a firm base and thickened borders, or in circumscribed encapsuled perforations, or in cases of adhesion with the head of the pancreas, the left lobe of the liver, or the spleen, a tumor may at times be palpated. Position not changed by respiratory movements. (15) Hydrochloric acid present, and increased in amount. (16) Perforation into the neighboring organs with its characteristic signs, appearing even after an apparently short duration of the disease, or without not so much as a premonition.

With the simultaneous presence of the three classical symptoms—typical gastralgia, hematemesis, and bloody stools—together with absence of tumor and cachexia, still remains the most positive means of making a diagnosis. At times we can only make the diagnosis by the success or failure of specific treatment for ulcers. A special difficulty in diagnosis may be caused by the above-mentioned tumor-like cicatrization, and where neighboring organs have been drawn into the base of the ulcer, which has become adherent to them and perforated over them. There is also a lymphatic gland in the ligamentum gastrocolicum, and especially a chain of glands situated near by, which, under certain circumstances, becomes sympathetically swollen and sensitive on pressure, and which may be detected on palpation as small tumors of the size of a hazelnut at the lower edge of the stomach. In all these cases the fact that the tumor remains unaltered, the maintenance of strength and the presence of hydrochloric acid speak for the diagnosis of ulcer and against cancer.

After all that has been said this important question must present itself to you: Are we justified in using the stomach-tube in cases of, or suspected cases of, gastric ulcer? Upon the answer to this question most important results may at times depend. You know that only a short time ago this was always answered with a decided negative, and that some clinicians yet take this wise precaution, but very recently we have become less anxious in the use of the tube. It can not be denied that the danger of causing damage in introducing the soft tube is much lessened after previously cocainizing the throat, but it is not entirely eliminated, and if you reflect how easy it is, even in practiced

patients, for movements of gagging or vomiting to occur in the course of manipulations, examination by means of the tube must be undertaken with the greatest caution, and it should only be used in those doubtful cases of short duration in which no hematemesis has occurred, and in which the probability of a deep ulcer is slight.

Prognosis. Until within a short time it was customary and proper to give a doubtful prognosis in cases of gastric ulcers when the diagnosis could only be made by the established symptoms, but now, since we are able to recognize the early stages and to differentiate it from other dyspepsias, since the principles of treatment have become apparent to us, and we are in a position to apply them at the commencement of the process, the prognosis has become essentially better as far as the early stages of the ulcer are concerned. We may now aid the patient, if the patient will subject himself to a rational course of treatment, that is, the rest-cure, at the proper time, we can give him well grounded prospects of recovery, and even in cases of classical ulcer we may hope for a cure or for a decided improvement. It is to be regretted that during the earliest stages, which are not very troublesome subjectively, very few patients are either willing or in the position to subject themselves to a course of treatment which is always exacting. However, if we succeed in permanently remedying the anomalies in the composition of the blood, or the secretion of gastric juice, we lessen the danger of relapses, which otherwise always threaten us and only too often appear; but the consequence of traction by the cicatrices, especially after the healing of the ulcer, always remains to be feared, as well as the accompanying permanent impairment of the general health which can not be remedied. In such cases, therefore, the prognosis must always be made with great care, but it is, nevertheless, not a poor one that can be deducted from the well-known fact that the scars of gastric ulcers are found about twice as often as the ulcers themselves. In hemorrhage, if this is not immediately fatal, the prognosis is on the whole favorable. As a rule we are able to control the bleeding by means of appropriate treatment, and even to remedy extreme anemia in a relatively short time. Sometimes death occurs in consequence of a concealed hemorrhage from a gastric ulcer. In such cases the phenomena are

those of collapse, terminating speedily in death. Sometimes, however, there is a discharge of blood through the bowels, which may be traced to an open vessel in the floor of a previously unsuspected ulcer.

This indicates the fact that a gastric ulcer is not always easily recognized. The occurrence of healing and cicatrization of the ulcer is not always devoid of danger. Pain is often persistent for a long time after a cure of ulceration. Sometimes the symptoms of acute disease subside as the evidences of chronic catarrhal inflammation become prominent and persistent indefinitely. As previously stated, when the pyloric orifice is the seat of the disease, cicatricial contraction may lead to stenosis of the pylorus and consequently dilatation of the stomach. If the muscular layer has been destroyed, the opposite condition will exist and the stomach will be unable to retain its contents because of destruction of the pyloric sphincter.

Treatment. The treatment of gastric ulcer of the stomach must be dietetic, medical, and mechanical.

70 State Street.

TONIC AND SPASMODIC INTESTINAL CONTRACTIONS: WITH REPORT OF CASES.*

BY X. O. WERDER, M. D.,
PITTSBURGH, PA.

The author reviewed five cases, one of Dr. Murphy's, two of Dr. Long's, and two of his own, reported by Dr. Long at the preceding meeting of the Association, and added some additional cases of a similar condition that he has observed subsequently.

He referred to cases reported by Heidenhain, and applied the term enterospasm, dividing the cases, according to their nature and severity, into spasmodic and tonic or tetanic forms. He considers that they are perversions of normal peristalsis, due to reflex chemical or mechanical irritation exerted at the seat of contraction (either on the mucous or serous surface of the bowel), or elsewhere in the alimentary canal or abdomen, and shows that

*Abstract of a paper read at the meeting of the American Association of Obstetricians and Gynecologists recently held at Niagara Falls.

they assume surgical importance when in the spasmodic varieties they simulate neoplasms, as in three cases of that variety reported, or when they cause obstruction to the fecal current, becoming true cases of dynamic ileus, as in the five cases above referred to. Regarding the accuracy of diagnosis in these five cases there can be but little doubt.

Dr. Long's cases had undoubted symptoms of intestinal obstruction that varied in intensity over quite a long period of time. Operation revealed firm contractions of bowel. Careful search failed to show any other cause for the symptoms.

Dr. Murphy's case had been previously treated for several attacks of lead colic. Operated for intestinal obstruction of several days' duration. Nothing found but firm contraction of bowel. It relaxed after exposure to air. Three hours later spontaneous bowel movements occurred.

Dr. Werder's first case gave a history of previous attacks following ingestion of articles of diet made from milk. Simple salpingo-oöphorectomy for small sarcoma. Clean case. Excellent condition for first six days. Onset of attack sudden, and followed closely after ingestion of egg-nogg. Symptoms of partial intestinal obstruction that later became complete, plus depressing effects of some toxic agents, were noted. Especial attention was called to two rational but misleading symptoms, viz., the occasional expulsion of gas for the first three days (that is, till patient was in collapse, two days before death), and an abdomen that was soft, flat, and not tense or tender. Violent peristalsis persisted till death. Autopsy, four hours later, showed peritoneum everywhere glistening, normal. Pedicle covered by normal endothelium. No adhesions; no exudate; nothing abnormal could be found except firm contraction of lower fifty-five cm. of ileum and whole large intestine, and sacculation of section of bowel next above it. Cause of contraction attributed, as a probability, to tyrotoxicon absorption; death of patient, to intensified absorption of tyrotoxicon and other toxines forcibly retained in bowel.

His second case followed vaginal hysterectomy for small fibroid. Symptoms of obstruction began earlier and were more pronounced than in the preceding case. Peristalsis persisted till death at the end of the fourth day. Autopsy, two hours later,

showed sigmoid and ileum adherent to vaginal vault for an extent of three inches. All peritoneum visible from above was normal in appearance. No exudate. Bowel extending from seat of adhesion of ileum to valve, and from adhesion of sigmoid to anus, firmly contracted. Sacculated bowel above. Plastic lymph at seat of adhesion, and exposure to vaginal gauze and clamps; two c.c. found there; no pus visible to naked eye; no microscopic examination. Cause of contraction, chemical and mechanical irritation applied to serous surface of bowel; cause of death, possibility of mild sepsis combined with absorption of toxines from intestinal canal.

Of the spasmodic variety, the first case showed a sausage-shaped mass three inches long and one inch thick at the pylorus, with limited mobility, and mapped out at each examination by several careful observers. Abdomen opened; pylorus and duodenum delivered. Looked and felt normal. On manipulation they contracted firmly and were as hard as a finger, but only to relax in two or three minutes. This was repeated several times in full view of all present. In the second case contraction found accidentally while doing a suspensio uteri. In third and fourth cases consulted for supposed presence of a tumor. Found firm contraction of bowel near umbilicus that resembled a neoplasm. It relaxed and contracted again several times during examinations that lasted fifteen or twenty minutes, always reappearing at the same place. Condition recognized and operation advised against. These patients were all neurotic, and complained of quivering and commotion at seat of trouble, as well as of dyspepsia and obstinate constipation.

Remember Mathews' Quarterly Special to Denver.

Society Proceedings.

BRITISH MEDICAL ASSOCIATION.

The sixty-fifth annual meeting of the British Medical Association will pass into history as one of the most successful meetings it ever held, being especially notable as it is the first one ever held off the Continent.

For its eminent success much credit is due the city itself which was selected as the place of meeting, as it may be classed as an ideal convention city, but to the admirable arrangements perfected by the local profession, with Dr. J. G. Adami as chairman of the committee, is its real success due. The arrangements were complete, even to the minutest detail, and the courtesies extended the invited American guests were cordial and equal in every respect to those accorded the members.

In point of numbers, the expectations of the committee were realized, and many names honored and esteemed by the profession of the whole world were registered; most notable being that of Lord Lister, at the mention of whose name by the speakers before the general Association was evoked prolonged and hearty applause, showing in what esteem is this honorable gentleman held by all.

Among the features inaugurated by the local committee, which is new to the members of American societies in attendance, may be mentioned the following: A membership card, which was nontransferable and could not be replaced if lost, and which had to be presented before tickets or invitations could be secured; a daily journal, which was greatly appreciated, containing the complete roster of registered names, the programme for the day, and a resume of the proceedings of the previous day, also in full the several addresses delivered before the general association. The button was generally admired and prized, an oval containing in its center on a white enamel background the maple leaf, in autumn colors, emblematic of Canada, and around the edge the name of the Association and Montreal, 1897, in a colored background, Cambridge blue for the guests, navy blue for members,

red for presidents and secretaries of local committees and section officers, and a gold badge for the president and honorary local treasurers and secretaries.

The reception tent, with its various departments, registration, excursions, entertainments, railroads and steamship lines, reading- and writing-rooms, was very greatly appreciated and the committee complimented on account of its completeness.

The courtesies extended members and guests by the Canadian railroads should be brought to the notice of our American roads. Half fare or one fare round trip on presentation of a special certificate issued by the committee prevailed for several days before the meeting and for thirty days afterward; no certificate to be signed or delay on this account, and the universal courtesies extended by the railroad employes, and even by the customs officials, who considered it unnecessary to examine the doctors' baggage, should not be passed without special notice.

The general plan of the meetings was as follows: From 9:30 A. M. to 1 P. M. were held the meetings of the eleven sections, divided as follows: Medicine; Surgery; Public Medicine; Obstetrics and Gynecology; Pharmacology and Therapeutics; Pathology and Bacteriology; Psychology; Ophthalmology; Laryngology and Otology; Anatomy and Physiology, and Dermatology, with the address of the chairman of each on the morning of the first day. At 2:30 P. M. of each day the addresses were made before the general association as follows: Address in Medicine, by Wm. Osler, M. D., F. R. C. P., of Baltimore; address in Surgery, by Wm. Mitchell Banks, F. R. C. P., Liverpool, England, and an address in Public Medicine, by Dr. Hermann M. Biggs, of New York City.

The opening service took place in the English Cathedral, with a sermon by Dr. Dumoulin, Bishop of Niagara, and at 2:30 P. M. the opening ceremonies at Windsor Hall, where were heard welcoming addresses from "the Worshipful, the Mayor of Montreal; Lieutenant-Governor of the Province of Quebec, Sir Adolphe Chapleau; the Right Honorable the Earl of Aberdeen, Governor-General of Canada; the Right Honorable Lord Lister, and the Right Honorable Lord Strathcona and Mount Royal.'

Dr. Robert Saundby, President of the Council, assumed the chair, called the meeting to order with a graceful speech, and

introduced the President, Dr. T. G. Roddick, of Montreal, who then delivered the annual address, entitled "Canada, its Medical Life and Resources."

Dr. Roddick traced out the history of the British Medical Association and its progress in embracing the various provinces. Reference was made to the visit of Mr. Ernest Hart, Editor of the *British Medical Journal*, to Canada in 1891, at which time he remarked that he looked forward to the time when the Canadian membership would be large enough to invite the Association to hold a meeting in Canada; and that he hoped the first meeting held outside the British Isles would be held in Canada. Said Dr. Roddick in commenting upon this, "Little did we think at the time that Mr. Hart's hopes would be so quickly realized. But the idea has ever been present with us, and those who subsequently attended meetings of the British Medical Association in England have lost no opportunity of advocating the claims of Canada, and especially of this metropolitan city of Canada, as a place of meeting for the Association."

The address of Dr. Roddick may be considered authorative upon the Canadian climate, health resorts, and springs, medical education, nursing, and medical legislation, so fully did he enter into the consideration of these subjects.

In a beautifully worded speech the Right Honorable Lord Lister moved a vote of thanks to Dr. Roddick for his admirable address.

Among the notable delegates to the Association was Professor Charles Richet, the delegate from the French Government, and of the Faculty of Medicine of Paris, who delivered an address, in French, at Laval University, entitled "The Work of Pasteur and the Modern Conception of Medicine." Want of space prevents our going into detail in regard to this address, but it was a glowing tribute to the memory of the great Pasteur, in which he detailed the steps in his work which made him famous as a benefactor to the human race; his development at the very outset of his career of the problem of molecular dissymmetry, and the work of six years in which he was able to demonstrate that "organic liquids do not alter until a living germ is introduced into them, and living germs exist everywhere." The microbic theory of disease was the next step, and the speaker loyally corrected the

statement of Prof. Marshall Hall, that it was Koch who discovered the part played by micro-organisms in disease, and stated that ten years before that date Pasteur had published experiments on *pébrine* and *flacherie*.

Antiseptic surgery and the union of medicine and science began with the work of Pasteur, and in consequence of his work in other lines the development of serum therapeutics.

The royal reception given Dr. Osler upon his appearance to deliver the annual address in medicine evidenced the esteem in which he is held, not only by his adopted countrymen but by the members of the British Medical Association in Canada and abroad. In his address he traced the moulding and development of British medicine in Greater Britain. To the great triumvirate, as the fountainheads, Linacre, Sydenham, and Harvey, was traced the streams of inspiration which have made British medicine what it is to-day. Dr. Osler's address was received with enthusiasm, and Dr. Stephen Mackenzie expressed the sentiments of his audience in expressing his pleasure and his thanks for it.

The meeting at this time was converted into a convocation of McGill University for the conferring of degrees on certain distinguished members of the medical profession. The President of the Board of Trustees, Lord Strathcona and Mount Royal, then conferred the honorary degree of Doctor of Laws upon the following distinguished gentlemen: The Right Honorable Lord Lister; Mr. Charles Richet, Professor of Physiology in the University of Paris; Sir Walter Foster; Sir William Turner, Professor of Anatomy in the University of Edinburgh; Dr. Henry Barnes, President of the Association; Prof. Michael Foster, the English Physiologist; Dr. W. H. Gaskell, one of Foster's pupils and a celebrated physiologist; Mr. Christopher Heath, late President of the Royal College of Surgeons of England; Dr. Alexander Macallister, Professor of Anatomy at Dublin; Dr. Robert Saundby, President of the Council, noted for his work on diabetes; Claud Wheelhouse, who was awarded, with Sir Walter Foster, the gold medal of the Association for distinguished services.

The address of the Chairman of the Section on Surgery, Mr. Christopher Heath, dealt with the Teaching of Surgery. He mentioned the fact that twelve years ago, in the Dictionary of

Practical Surgery, which he had edited, no mention was made of either appendicitis or Kraske's operation for the removal of the rectum, as an evidence of the strides made in the department of surgery.

The speaker was inclined to believe that the modern teaching of anatomy was faulty, that the teachers were anatomists and not surgeons, and that their tendency was to lay stress on transcendental details rather than surgical relations. He feared that the additional year added to the medical curriculum of to-day instead of being devoted to clinical study, as he believed was the original intention, more time was given in which to pass the primary examinations, these delaying the study of medicine and surgery.

One of the set subjects for discussion was Appendicitis, which was freely indulged in by a number of members of the section.

Dr. Armstrong, of Montreal, advocated early operation, and pointed out the dangers of purgatives and opium; he also recommended removal of the abscess wall as thoroughly as possible; his method of drainage was the use of three large rubber tubes, one into the pelvis, one into the loin, and one across the abdomen, or down to the stump of the appendix.

Dr. Cousins, Southsea, advocated operation if in three or four days there was no improvement; used the oblique incision and silk ligatures instead of retractors, to avoid bruising the tissues.

Prof. Ball, Dublin, divided the disease into three classes, the fulminating, those with abscess formation, and the indefinable type, in which it is difficult to ascertain how the case is progressing.

Dr. Van der Veer, of Albany, would operate after the second attack and not subject the patient to subsequent attacks, and would remove as much of the appendix as possible. He emphasized the importance of early operation, not waiting for the localization of McBurney's point.

Dr. Alex. H. Ferguson, of Chicago, recommended operation in all clear and uncomplicated cases, not searching for the appendix when difficult to find, and flushing out the abscess cavity.

Dr. Gordon, of Portland, Me., advised the saline treatment as successfully carrying ninety per cent. of cases through the attack, then operating afterward.

Other papers of interest read before the surgical section were Ventral and Umbilical Hernia in the Same Patient, by Dr. H. E. Garrow, Montreal; Stricture of the Intestine as a Sequel of Strangulated Hernia, by Dr. Alexis Thompson, of Edinburgh; On the Suturing of Wounds, by Dr. H. O. Marcy, of Boston; Invagination of the Cecum and Vermiform Appendix, by Dr. Theo. A. McGraw, of Detroit; A Case of Abdominal Tumor in which nearly Eight Feet of Intestine were resected, by Dr. F. J. Shepherd, of Montreal; Diagnosis and Treatment of Penetrating Wounds of the Abdominal Cavity, by Dr. Tobias Nunez, of Mexico; Personal Observations on the Surgery of the Gall-bladder and Bile Duct, by Dr. Alex. H. Ferguson, of Chicago.

As to the social functions much could be said. The adjournment of the sections for the day at 1:30, and the afternoon sessions closing by 4:00 P. M., left ample time for the entertainment of the members and guests. The entertainments which were given were largely attended and greatly appreciated.

On the afternoon of the first day the members and guests were given a "drive" through the city on the electric cars, an afternoon tea and reception at the Art Gallery by Miss Roddick, and a soirée at Laval University in the evening.

On the second afternoon about three hundred enjoyed a sail down the Lachine Rapids; a number attended the garden party at the grounds of the Royal Victoria Hospital, and in the evening the elegant reception at the residence of the Right Honorable Lord Strathcona and Mount Royal, which was very largely attended.

On the third afternoon was given the International Golf Match and Reception at Dixie; the laying of the corner-stone of the Nurse's Home at the Montreal General Hospital by the Right Honorable Lord Lister; and in the evening about twelve hundred sat down to the annual dinner at Windsor Hotel, while in Windsor Hall occurred the concert.

On the fourth day a second excursion was given to Lachine and down the rapids, and in the evening a conversazione at McGill University, in the University buildings and grounds. On the last day the local profession gave an excursion to Ottawa and return.

This account would not be complete without brief mention of the enjoyable trip from Chicago to Montreal via Wabash and Can-

adian Pacific railroads, on special sleeper run under the auspices of the *Ophthalmic Record.* On it were the following: Dr. T. A. Woodruff, Dr. McMartin, Dr. J. T. Campbell, Dr. T. J. Watkins and wife and Miss Williams, Dr. S. C. Stanton, Dr. A. H. Ferguson and wife, Dr. Morton, Mrs. Dr. Henrotin, all of Chicago, Ill.; Dr. Würdeman, of Milwaukee; Dr. Cameron, of Kearney, Neb.; Dr. Conroy, of Denver, Col.; Dr. R. Dewey and wife, of Wauwatosa, Wis.; Dr. Campbell, of Saginaw; Dr. Jones, of Winnipeg, and Dr. and Mrs. Henry E. Tuley, of Louisville, Ky.

Dr. J. B. Marvin, of Louisville, attended as the accredited delegate from the Kentucky State Medical Society.

HENRY E. TULEY.

WELCOME TO LOUISVILLE.

The Twenty-third Annual Meeting of the Mississippi Valley Medical Association will be held in Louisville, on the 5th, 6th, 7th, and 8th of this month. The Committee of Arrangements, under the leadership of Dr. H. Horace Grant, has provided a most excellent place of meeting in the Liederkranz Hall, and the Scottish Rite Hall, where the arrangements for the reception of the members, the Meeting Halls and the Exhibitor's Hall, are all that could be desired. The General Sessions and the Medical Section will be ably presided over by Dr. Thomas Hunt Stucky,

of this city, and the Surgical Section by one of the Vice-Presidents.

The special addresses will be delivered by Dr. John B. Murphy, of Chicago, on Surgery, and by Dr. J. V. Shoemaker, of Philadelphia, on Medicine.

On the evening of the second day a Reception and Buffet will be given the members of the Association and their friends at the Louisville Hotel, Dr. J. B. Marvin, Chairman of the Entertainment Committee, and a corps of able assistants having charge of the entertainment. On the evening of the third day a Smoker will be given in Liederkranz Hall.

The Reception Committee will be presided over by Dr. L. S. McMurtry, and Mrs. William Bailey, assisted by a corps of ladies, will see to the entertainment of the wives and daughters of those attending.

The program as given below is unusually large and rich in material, and as may be seen is divided into two sections, a Medical and Surgical, this being rendered necessary because of the unusual length of the program.

Officers for 1897.

President, Thos. Hunt Stucky, Louisville; First Vice-President, C. A. Wheaton, St. Paul; Second Vice-President, Paul Paquin, St. Louis; Secretary, Hanau W. Loeb, St. Louis; Treasurer, W. N. Wishard, Indianapolis. Committee of Arrangements: H. Horace Grant, Chairman; Henry E. Tuley, Secretary; Jos. M. Mathews, Wm. Cheatham, A. M. Cartledge, W. O. Roberts, Ap Morgan Vance.

GENERAL SESSION.

First Day—Tuesday, October 5, 1897—Morning Session, 10 o'clock.

(*a*) Call to order by the Chairman of the Committee of Arrangements, Dr. H. Horace Grant.

(*b*) Prayer, Rev. E. L. Powell.

(*c*) Address of Welcome on behalf of the City and State, Hon. W. O. Bradley, Governor of Kentucky.

(*d*) Address of Welcome on behalf of the Profession of Louisville, Dr. William Bailey.

(*e*) Announcements of the Committee of Arrangements.

(*f*) Report of the Secretary.

(*g*) Report of the Treasurer.

(*h*) Miscellaneous Business.

(*i*) Address of the President, Dr. Thos. Hunt Stucky, Louisville.

(*j*) Reading of Papers — Medical Section, Liederkranz Hall; Surgical Section, Scottish Rite Hall.

SECOND DAY—WEDNESDAY, OCTOBER 6, 1897—MORNING SESSION, 9:30 O'CLOCK.

(*k*) Prayer, Rev. J. K. Mason, D. D.

(*l*) Report of Committee on Credentials.

(*m*) Appointment of the Nominating Committee.

(*n*) Report of the Judicial Council.

(*o*) Address on Medicine, Dr. John V. Shoemaker, Philadelphia, Pa., "Progress and Problems in Medicine."

(*p*) Reading of Papers — Medical Section, Liederkranz Hall; Surgical Section, Scottish Rite Hall. Reception, 8:00 p. m., Louisville Hotel.

THIRD DAY — THURSDAY, OCTOBER 7, 1897—MORNING SESSION, 9:30 O'CLOCK.

(*q*) Prayer, Rev. C. J. K. Jones.

(*r*) Report of Committees.

(*s*) Address on Surgery, Dr. John B. Murphy, Chicago, Ill.

(*t*) Reading of Papers — Medical Section, Liederkranz Hall; Surgical Section, Scottish Rite Hall. "Smoker," Liederkranz Hall, 8:30 p. m.

FOURTH DAY — FRIDAY, OCTOBER 8, 1897 — MORNING SESSION, 9:30 O'CLOCK.

(*u*) Prayer, Rev. W. B. Jennings.

(*v*) Report of Committee on Nominations.

(*w*) Installation of Officers-elect.

(*x*) Closing Ceremonies.

(*y*) Reading of Papers — Medical Section, Liederkranz Hall; Surgical Section, Scottish Rite Hall.

MEDICAL SECTION—LIEDERKRANZ HALL.

FIRST DAY—TUESDAY, OCTOBER 5, 1897—MORNING SESSION.

1. "The Nature of Croup"—I. A. Abt, Chicago, Ill.

2. "Mothers and Daughters"—B. Sherwood Dunn, Los Angeles, Cal.

3. "Typhoid Fever Treated without Cold Baths"—Jos. Eichberg, Cincinnati, O.

4. "The Antitoxic and Bactericidal Properties of the Serum of Horses Treated with Koch's New Tuberculin"—C. Fisch, St. Louis, Mo.

5. "Some Observations on the Blood of Malarial Fever"—F. Ferguson, New York.

AFTERNOON SESSION, 3 O'CLOCK.

6. "Further Observations in the Use of Hydrogen Dioxide in the Treatment of Blepharitis Marginalis"—S. C. Ayres, Cincinnati, O.

7. "Relations and Treatment of Coryza and Hay Fever"—S. S. Bishop, Chicago, Ill.

8. "Retro-Bulbar Optic Neuritis"—J. O. Stillson, Indianapolis, Ind.

9. "Chronically Diseased Tonsils"—H. W. Whitaker, Columbus, O.

10. "Plastic Operation for Repairing Inter-Palpebral Space"—K. K. Wheelock, Fort Wayne, Ind.

11. "Avulsio Oculi, with Presentation of Specimen"—Carl Barck, St. Louis, Mo.

12. "Regarding Hypertrophied Faucial Tonsils"—J. F. Barnhill, Indianapolis, Ind.

SECOND DAY—WEDNESDAY, OCTOBER 6, 1897—MORNING SESSION.

13. "Locomotor Ataxia in its Modern Aspects"—F. W. Langley, Cincinnati, O.

14. "Some New Thoughts in the Treatment of Locomotor Ataxia"—J. K. Bauduy, St. Louis, Mo.

15. "Diagnostic Significance of Certain Forms of Altered Sensation"—Sanger Brown, Chicago, Ill.

16. "The Motor Neuron in Practical Diagnosis: Mental Dyspepsia"—Hugh T. Patrick, Chicago, Ill.

17. "The Differential Diagnosis and Treatment of Cerebral Hemorrhage and Softening"—Archibald Church, Chicago, Ill.

18. "A Group of Paranoiacs with Criminal Tendencies"—R. Dewey, Wauwatosa, Wis.

19. "Insanity of Adolescence"—F. P. Norbury, Jacksonville, Ill.

20. "Posterior Radicular Neuritis"—E. G. Carpenter, Cleveland, O.

21. "Paralysis Agitans without Tremor"—Harold N. Moyer, Chicago, Ill.

22. "Tobacco Neuroses"—Philip Zenner, Cincinnati, O.

AFTERNOON SESSION, 3 O'CLOCK.

23. "Milk, its Production and Uses"—W. F. Barclay, Pittsburgh, Pa.

24. "Severe Injuries from Electricity, and What Best to Do"—H. Hatch, Quincy, Ill.

25. "Specific Aspect and Therapy of Some of the Common Neuroses"—B W. Holliday, Cleveland, O.

26. "Neuroses of Gout"—L. Harrison Mettler, Chicago, Ill.

27. "The Treatment of Cerebro-Spinal Syphilis"—A. E. Stern, Indianapolis, Ind.

28. "The Therapeutic Properties of Infant Foods"—E. W. Saunders, St. Louis, Mo.

29. "Beef, a War Paper"—E. Cutter, New York.

30. "The Nature of Intestinal Absorption"—T. C. Witherspoon, St. Louis, Mo.

31. "Amebic Dysentery Associated with Trichinosis Intestinalis"—Cunningham Wilson, Birmingham, Ala.

THIRD DAY—THURSDAY, OCTOBER 7, 1897—MORNING SESSION.

32. "Report of Five Cases of Heart Disease"—John M. Batten, Pittsburgh, Pa.

33. "The Diet of Heart Disease"—R. H. Babcock, Chicago, Ill.

34. "The Therapeutic Value of Arsenauro"—A. P. Buchanan, Fort Wayne, Ind.

35. "Report of a Case of Anesthesia Produced by Mercury, with Remarks"—C. Travis Drennen, Hot Springs, Ark.

36. "Tuberculin in Dermatology"—A Ravogli, Cincinnati, O.

37. "The Lithemic Tendency"—Fred R. Charlton, Indianapolis, Ind.

38. "The Carlsbad Springs of the United States of North America"—Enno Sander, St. Louis, Mo.

39. "Pressure Symptoms After Head Injuries"—Frank R. Fry, St. Louis, Mo.

AFTERNOON SESSION, 3 O'CLOCK.

40. "The Early Diagnosis of Tuberculosis by Observation of the Temperature"—J. R. Lemen, St. Louis, Mo.

41. "Climate in Pulmonary Tuberculosis"—A. C. Klebs, Chicago, Ill.

42. "The Sanatorium Treatment of Phthisis"—C. F. McGahan, Aiken, S. C.

43. "Municipal Sanitation of Tuberculosis"—Douglas C. Ramsey, Mt. Vernon, Ind.

44. "The Hypodermic Syringe and its Use in Malaria"—Kennon Dunham, Cincinnati, O.

45. "Experimental Work on the Penetrability of Vaporized Medicaments in the Air-Passages"—Homer M. Thomas, Chicago, Ill.

Supplemental Report of Cases—C. A. Johnson, Chicago, Ill.

Discussion opened by A. C. Klebs.

46. "Epistaxis in the Most Serious Forms, with Report of a Case Necessitating Ligation of the Common Carotid"—Max Thorner, Cincinnati, O.

FOURTH DAY—FRIDAY, OCTOBER 8, 1897—MORNING SESSION.

47. "Thyreoid Glands, Clinically"—I. N. Love, St. Louis, Mo.

48. "Growing Need of Medical Political Organizations"—Joseph Punton, Kansas City, Mo.

49. "Prolapsus Uteri"—S. G. West, Chicago, Ill.

50. "Why are Retro-Versions and Retro-Flexo-Versions of the Uterus, *per se*, Pathological during the Menstrual Life of the Human Female"—A. Goldspohn, Chicago, Ill.

51. "The Elimination of Empiricism in the Treatment of Pneumonia"—Elmer Lee, New York.

SURGICAL SECTION—SCOTTISH RITE HALL.

FIRST DAY—TUESDAY, OCTOBER 5, 1897—MORNING SESSION.

1. "Report of Some Cases of Ophthalmic Surgery"—James Moores Ball, St. Louis, Mo.

2. "The Causes and Treatment of Phlyctenular Keratitis"—Wm. H. Wilder, Chicago, Ill.

3. "Removal of Adenoids from the Vault of the Pharynx"—L. C. Kline, Indianapolis, Ind.

4. "Mouth-Breathing in Children"—Arthur G. Hobbs, Atlanta, Ga.

Discussion opened by H. W. Loeb, St. Louis, Mo.

5. "Some Experiences with Retained Tubes in Laryngeal Diphtheria and with Antistreptococcic Serum"—Rosa Engelman, Chicago, Ill.

6. "An Electric Sterilizer for Instruments in Ear, Nose, and Throat Practice"—W. Scheppegrell, New Orleans, La.

7. "Intra-Tympanic Surgery in Chronic Suppuration"—J. A. Stucky, Lexington, Ky.

AFTERNOON SESSION, 3 O'CLOCK.

8. "Surgery of the Air-Passages in Children"—J. Homer Coulter, Chicago, Ill.

9. "Treatment of Wounds by the Open Method"—J. B. Taulbee, Mt. Sterling, Ky.

10. "To Drain or Not to Drain"—Arch Dixon, Henderson, Ky.

11. "The Diagnosis of Abscess of the Liver, Based on a Study of Twenty-five Cases"—Arthur R. Edwards, Chicago, Ill.

12. "Hysterectomy"—F. F. Lawrence, Columbus, Ohio.

13. "Hysterectomy"—Henry P. Newman, Chicago, Ill.

14. "A Paper on Plastic Surgery"—Jos. Price, Philadelphia, Pa.

15. "A Plea for Early Operation in Cholelithiasis"—A. H. Meisenbach, St. Louis, Mo.

16. "Abdominal Incision for Ascites, with Report of Case"—B. M. Rickets, Cincinnati, O.

SECOND DAY—WEDNESDAY, OCTOBER 6, 1897—MORNING SESSION.

17. "The Diagnosis of Surgical Diseases of the Kidneys, Bladder, and Prostate"—Bayard Holmes, Chicago, Ill.

18. "Diagnosis by Inspection of the Urinary Tract"—Joseph R. Eastman, Indianapolis, Ind.

19. "Practical Urethroscopy, with the Introduction of a New Instrument"—Eugene C. Hay, Hot Springs, Ark.

20. "The Treatment of Obstructive Lesions of the Urinary Tract Anterior to the Bladder with Special Reference to the Prostate Gland"—C. C. Jacobs, Crossburg, Md.

21. "Further Simplification of the Irrigation Treatment of Gonorrhea, Embracing Greater Efficacy, Increased Facility, and Smaller Cost of Apparatus"—Fred C. Valentine, New York City.

22. "Vesico-Ureteral Calculus"—W. N. Wishard, Indianapolis, Ind.

23. "Circumcision, Is It Advisable?"—Bransford Lewis, St. Louis, Mo.

24. "Experimental Surgery"—E. B. Smith, Detroit, Mich.

AFTERNOON SESSION, 3 O'CLOCK.

25. "Most Frequent Causes of Peritonitis"—Rufus B. Hall, Cincinnati, O.

26. "Classification of Peritonitis"—Byron Robinson, Chicago, Ill.

27. "Symptoms and Surgical Treatment of Perforating Intestinal Ulcers"—A. F. House, Cleveland, O.

28. "Treatment of Hernia in Old Men"—A. J. Ochsner, Chicago, Ill.

29. "Syphilitic Formative Osteitis, with Report of Cases of Eburnation"—S. P. Coolings, Hot Springs, Ark.

30. "Primary Tuberculosis of the Rectum, with Report of Cases"—Leon Straus, St. Louis, Mo.

31. "Diseases of Rectum and Sigmoid as a Factor in General Disturbances"—J. R. Pennington, Chicago, Ill.

32. "The Treatment of Suppurating Fistulous Tracts"—E. J. Senn, Chicago, Ill.

33. "Cathartics and Constipation"—A. M. Owen, Evansville, Ind.

THIRD DAY—THURSDAY, OCTOBER. 7, 1897—MORNING SESSION.

34. "Some Remarks on Appendicitis"—John Young Brown, St. Louis, Mo.

35. "Appendicitis"—Spencer Graves, St. Louis, Mo.

36. "Appendicitis"—E. L. Larkins, Terre Haute, Ind.

37. "Secondary Hemorrhage Following Appendectomy"—H. O. Walker, Detroit, Mich.

38. "Post-Operative Hernia in Appendicitis Cases"—Robert T. Morris, New York City.

39. "Ectopic Pregnancy, Clinical and Pathological Phases"—A. H. Cordier, Kansas City, Mo.

40. "The Treatment of Puerperal Eclampsia"—B. M. Hypes, St. Louis, Mo.

41. "Vaginal Incision and Drainage in Ectopic Gestation"—W. G. Haggard, Nashville, Tenn.

42. "Surgical Treatment of Fibroid Tumors of the Uterus"—Augustus Goelet, New York City.

AFTERNOON SESSION, 3 O'CLOCK.

43. "A Plea for the Earlier Diagnosis of Bone and Joint Disease of Infants"—Jan. L. Porter, Chicago, Ill.

44. "Neurotic Deformities in Children"—J. W. Cokenower, Des Moines, Ia.

45. "Correction of Spinal Curvature Under Complete Anesthesia"—John Ridlon, Chicago, Ill.

46. "Congenital Dislocation of the Hip"—A. C. Wiener, Chicago, Ill.

47. "The Treatment of Scoliosis"—Wm. E. Wirt, Cleveland, O.

48. "Ischemic Paralysis and Contractures Following Fractures"—A. C. Bernays, St. Louis, Mo.

FOURTH DAY—FRIDAY, OCTOBER, 8, 1897—MORNING SESSION.

49. "An Improved Skiascope to Facilitate the Shadow Test in Estimating the Errors of Refraction"—J. Ellis Jenning, St. Louis, Mo.

50. "Abortion"—Florence W. Hays, Terre Haute, Ind.

51. "Surgical Treatment of Basedow's Disease"—A. F. Bock, St. Louis, Mo.

52. "Cocaine Anesthesia in Perineorrhaphy"—W. H. Humiston, Cleveland, O.

53. "Some Clinical Notes"—T. A. Reamy, Cincinnati, O.

AMERICAN ACADEMY OF RAILWAY SURGEONS.

PRELIMINARY PROGRAM OF THE FOURTH ANNUAL MEETING OF THE AMERICAN ACADEMY OF RAILWAY SURGEONS, TO BE HELD IN THE AUDITORIUM, AT CHICAGO, ILL., ON WEDNESDAY, THURSDAY, AND FRIDAY, OCTOBER 6, 7, AND 8, 1897.

MORNING SESSION, WEDNESDAY, OCTOBER 6, 1897, 10 O'CLOCK, STANDARD TIME—EXECUTIVE SESSION.

Report of Officers, Standing and Special Committees.

Applications for Fellowship.

President's Address, "The Relations Between Medical and Legal Departments of Railways," by L. E. Lemen, M. D., Division Surgeon U. P. Railway, Denver, Colo.

AFTERNOON SESSION, WEDNESDAY, OCTOBER 6, 1897, 2 O'CLOCK, STANDARD TIME—EXECUTIVE SESSION.

Symposium on the X Rays.

(*a*) "As Applied to Osteology"—Fred J. Hodges, M. D., Chief Surgeon C. & S. E. R'y, Anderson, Ind.

Discussion opened by W. L. Smith, M. D., Surgeon A. T. & S. F. R'y, Streater, Ill.

(*b*) "As Applied to Foreign Bodies in Cavities"—W. T. Dalby, M. D., Assistant Surgeon U. P. R'y, Salt Lake City, Utah.

Discussion opened by A. C. Scott, M. D., Chief Surgeon G. C. & S. F. R'y, Temple, Tex.

(*c*) "As Applied to Foreign Bodies in General Tissues"—F. H. Peck, M. D., Surgeon N. Y., G. & W. R'y, Utica, N. Y.

Discussion opened by S. C. Baldwin, M. D., Surgeon G. S. L. & H. S. R'y, Salt Lake City, Utah.

(*d*) "Their Relation to the Eye"—Archibald G. Thompson, M. D., Assistant Oculist, Pennsylvania Railway, Philadelphia, Pa.

Discussion opened by D. C. Bryant, M. D., Oculist U. P. R'y, Omaha, Neb.

(*e*) "From a Medico-Legal Standpoint"—R. Harvey Reed, M. D., Chief Surgeon C., S. & H. R. R. Co., Columbus, O.

Discussion opened by Truman Miller, M. D., Chief Surgeon Western Division G. T. R'y System, Chicago, Ill.

MORNING SESSION, THURSDAY, OCTOBER 7, 1897, 9:30 O'CLOCK, STANDARD TIME—EXECUTIVE SESSION.

"Traumatisms of the Contents of the Abdominal Cavity"—J. P. Lord, M. D., Assistant Surgeon U. P. R'y, Omaha, Neb.

Discussion opened by T. J. Redling, M. D., Surgeon C. & N. W. R'y, Marinette, Wis.

"Best Methods of Surgical Sterilization"—Eduard Boeckmann, M. D., Chicago Great Western, St. Paul, Minn.

Discussion opened by E. M. Dooley, M. D., Surgeon N. Y., L. E. & W. R'y, Buffalo, N. Y.

"Results of Interference in Old Head Injuries"—John W. Perkins, M. D., Surgeon U. P. R'y, Kansas City, Mo.

Discussion opened by R. S. Harnden, M. D., Surgeon Erie R'y, Waverly, N. Y.

"Medico-Legal Address"—The Relations Between the Surgical and Legal Departments of Railways—Judge C. O. Hunter, General Solicitor the Columbus, Hocking Valley & Toledo R'y Co., Columbus, O.

Discussion opened by M. Gardner, M. D., Chief Surgeon S. P. R'y, San Francisco, Cal.

AFTERNOON SESSION, THURSDAY, OCTOBER 7, 1897, 2 O'CLOCK, STANDARD TIME—AT RUSH MEDICAL COLLEGE.

"Special Clinic" in honor of the Academy—By N. Senn, A. M., M. D., LL. D., Surgeon C., St. P., M. & O. R'y, Chicago, Ill.

MORNING SESSION, FRIDAY, OCTOBER 8, 1897, 9:30 O'CLOCK, STANDARD TIME—EXECUTIVE SESSION.

"Railway Spine and Litigation Symptoms"—W. W. Grant, M. D., Surgeon C., R. I. & P. R'y, Denver, Colo.

Discussion opened by W. L. Estes, M. D., Chief Surgeon L. V. R'y, South Bethlehem, Pa.

Symposium on Oblique Fractures.

(*a*) "Mechanical Features"—John E. Owens, M. D., Chief Surgeon Illinois Central R'y, Chicago, Ill.

Discussion opened by W. J. Galbraith, M. D., Chief Surgeon U. P. R'y, Omaha, Neb.

(*b*) "Diagnosis and Pathology"—W. J. Mayo, M. D., Surgeon C. & N. W. R'y, Rochester, Minn.

Discussion opened by E. Wyllys Andrews, M. D., Surgeon Wabash R'y, Chicago, Ill.

(*c*) "Treatment"—C. K. Cole, M. D., Chief Surgeon Montana Central R'y, Helena, Mont.

Discussion opened by Charles Fry, M. D., Surgeon C., C., C. & St. L. R'y, Mattoon, Ill.

(*d*) "The Results and Their Medico-Legal Importance"—C. M. Daniels, M. D., Chief Surgeon Erie R'y, Buffalo, N. Y.

Discussion opened by D. S. Fairchild, M. D., Surgeon C. & N. W. R'y, Clinton, Ia.

AFTERNOON SESSION, FRIDAY, OCTOBER 8, 1897, 2 O'CLOCK, STANDARD TIME—EXECUTIVE SESSION.

"Conservative Surgery"—Ricardo Ortega, M. D., Chief Surgeon Mexican International R'y, Ciudad Porfirio Diaz, Mexico.

Discussion opened by Milton Jay, M. D., Chief Surgeon C. & E. I. R'y, Chicago, Ill.

"Mutual Relations Between the Railway Surgeon and the Neurologist"—J. T. Eskridge, M. D., Neurologist Union Pacific R'y, Denver, Colo.

Discussion opened by Henry McHatton, M. D., Surgeon Southern R'y, Macon, Ga.

Election of Officers.

Selection of Next Place of Meeting.

Miscellaneous Business.

Introduction Officers-elect.

Adjournment.

OFFICERS OF THE AMERICAN ACADEMY OF RAILWAY SURGEONS FOR THE YEAR 1896–1897.

President, L. E. Lemen, M. D., Division Surgeon U. P. R'y, Denver, Colo.

First Vice-President, M. Gardner, M. D., Chief Surgeon S. P. R'y, San Francisco, Cal.

Second Vice-President, Ricardo Ortega, M. D., Chief Surgeon Mexican International R'y, Ciudad Porfirio Diaz, Mexico.

Secretary, D. C. Bryant, M. D., Oculist U. P. R'y, Omaha, Neb.

Treasurer, C. B. Kibler, Surgeon Erie R'y, Corry, Pa.

Editor, R. Harvey Reed, M. D., Chief Surgeon C., S. & H. R. R. Co., Columbus, Ohio.

Executive Board.

W. R. Blakeslee, M. D., Chairman, Surgeon Erie R'y, Forest City, Pa., term expires 1900.

C. M. Daniels, M. D., Chief Surgeon Erie R'y, Buffalo, N. Y., term expires 1899.

F. R. Ainesworth, M. D., Division Surgeon S. P. R'y, Los Angeles, Cal., term expires 1898.

Milton Jay, M. D., Chief Surpeon C. & E. I. R'y, Chicago, Ill., term expires 1897.

Committee on Publication. (*Ex-Officio.*)

L. E. Lemen, M. D., Chairman, Division Surgeon U. P. R'y, Denver, Colo.

D. C. Bryant, M. D., Oculist U. P. R'y, Omaha, Neb.

C. B. Kibler, M. D., Surgeon Erie R'y, Corry, Pa.

R. Harvey Reed, M. D., Chief Surgeon C., S. & H. R. R. Co., Columbus, O.

Committee on Transportation.

W. J. Galbraith, M. D., Chairman, Chief Surgeon U. P. R'y, Omaha, Neb.

A. D. Bevan, M. D., formerly Chief Surgeon Iowa Central R'y, Chicago, Ill.

A. C. Scott, M. D., Chief Surgeon G. C. & S. F. R'y, Temple, Texas.

Committee of Arrangements.

John E. Owens, Chairman, Chief Surgeon C. & N. W. R'y, Chicago, Ill.

Jesse Hawes, M. D. Surgeon U. P. D. & G. R'y, Greeley, Colo.

C. D. Evans, M. D., Surgeon U. P. & B. & M. R'y, Columbus, Neb.

THE TRI-STATE MEDICAL SOCIETY.

The next meeting of the Tri-State Medical Society in Nashville, under the presidency of Dr. Willis F. Westmoreland, of Atlanta, bids fair to be one of the most successful in its history. The added attractions of the Centennial Exposition at Nashville, where the meetings will be held, will no doubt swell the attendance. Dr. Frank T. Smith, of Chattanooga, is secretary of the Association.

The meeting will be held in the Senate Chamber, October 12th, 13th, and 14th. Dr. W. D. Haggard, Jr., is Chairman of the Committee of Arrangements.

Following is the program:

1. "President's Address: Carcinoma of the Breast." W. F. Westmoreland, Atlanta, Ga.
2. "Psychology." J. B. Cowan, Tullahoma, Tenn.
3. "The True Physician—His Responsibilities—His Duty to his Profession and the People." John C. LeGrand, Anniston, Ala.
4. "A Pessimistic and an Optimistic View of Medicine." Y. L. Abernathy, Hill City, Tenn.
5. "A Bouquet of Remedial Agencies." John P. Stewart, Attalla, Ala.
6. "Treatment of Typhoid Fever." John A. Larrabee, Louisville, Ky.
7. "Abortive Treatment of La Grippe." E. H. Richardson, Atlanta, Ga.
8. "Electro-Therapy in Medicines." Louise Eleanor Smith, Chattanooga.
9. "A New Mode of Internal Electro-Therapy." R. P. Johnson, Chattanooga, Tenn.
10. "Common Sore Throat." James H. Atlee, Chattanooga, Tenn.
11. "Vaccination." Seale Harris, Union Springs, Ala.
12. "The Pathology and Diagnosis of Early Phthisis." Llewellyn P. Barbour, Tullahoma, Tenn.
13. "Sero-Therapy in Tuberculosis." Paul Paquin, St. Louis, Mo.
14. "Importance of Early Recognition of Pleural Effusions, Due to Causes Other than those located in the Pleuræ." Louis H. Jones, Atlanta, Ga.
15. "Abnormal Metabolism." G. W. Drake, Chattanooga, Tenn.
16. "The Subject of Hematology." E. C. Anderson, Chattanooga, Tenn.
17. "Inhibition, Physiological and Pathological." J. F. Peavy, Atmore, Ala.
18. "The Rational Treatment of Cancer of the Uterus." George Wiley Broome, St. Louis, Mo.
19. "A Case of Fracture of the Skull, followed by Basilar Hemorrhage; Trephining; Recovery." Curran Pope, Louisville, Ky.
20. "The Relation of the Cause to the Immediate and Remote Results of Fracture." R. M. Cunningham, Birmingham, Ala.
21. "Is Cancer Contagious?" E. Mather, Patterson, N. J.
22. "Stimulants and Narcotics in Obstetrics and Gynecology." R. R. Kime, Atlanta, Ga.
23. "Surgical Shock." Gilbert I. Cullen, Cincinnati, O.
24. "Cystitis; Its Course and Treatment." W. L. Nolen, Chattanooga, Tenn.
25. "Stricture of the Urethra and its Treatment." William R. Blue, Louisville, Ky.
26. "Operative Treatment in Enlarged Prostate." H. H. Grant, Louisville, Ky.
27. "Treatment of Chancroidal Ulcers." A. R. Danforth, Atlanta, Ga.
28. "Ablation of the Scrotum for Conditions other than Varicocele." W. S. Goldsmith, Atlanta, Ga.
29. "The Treatment of Cancer of the Rectum." J. M. Mathews, Louisville, Ky.
30. "Burns and Scalds." G. A. Baxter, Chattanooga, Tenn.
31. "Metatarsalgia, or Morton's Painful Toe." George S. Brown, Birmingham, Ala.
32. "The Application of Plaster Jacket and Dressings." F. B. Sloan, Cowan, Tenn.
33. "Surgery of the Stomach." H. Berlin, Chattanooga, Tenn.
34. "Report of Operative Cases (Brain)." S. G. Courtney Pinckney, Atlanta, Ga.
35. "Fracture of the Elbow." B. G. Copeland, Birmingham, Ala.
36. "Treatment of Fractured Maxillæ." D. S. Arnold, Atlanta, Ga.
37. "The After-Treatment of Abdominal Operations." Valentine Taliaferro, Atlanta, Ga.
38. "Epiplocele, Report of a Case." J. W. Griggs, West Point, Ga.
39. "Appendicitis." G. Manning Ellis, Chattanooga, Tenn.
40. "The Evolution of the Treatment of the Stump, in Operations for Appendicitis." W. D. Haggard, jr., Nashville, Tenn.

41. "Obstetrics." W. G. Bogart, Chattanooga, Tenn.
42. "Some of the Mammoth Ovarian Tumors of Surgical History." A. M. Cartledge, Louisville, Ky.
43. "Cases of Ectopic Gestation, Operated on by the Vaginal Route." W. E. B. Davis, Birmingham, Ala.
44. "The Technique in Hysterectomy for Uterine Myomata." W. H. Wathen, Louisville, Ky.
45. "Hysterectomy." Louis Frank, M D., Louisville, Ky.
46. "Hysterectomy in the Treatment of Pelvic Diseases." George R. West, Chattanooga, Tenn.
47. "Flap Operation for Artresia Vaginæ." Geo. H. Noble, Atlanta, Ga.
48. "Meningitis in Children." J. W. Russey, Chattanooga, Tenn.
49. "Mouth-Breathing in Children, and its Dangers." William Cheatham, Louisville, Ky.
50. "Injurious Results of Incompetent Refraction Work." Frank Sims, Atlanta, Ga.
51. "The Causes, Diagnosis, and Prognosis of Valvular Diseases." Hazle Padgett, Columbia, Tenn.
52. "Rheumatism as an Etiological Factor in Cardiac Diseases." S. W. Fain, Chattanooga, Tenn.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

This society, composed of some of the most distinguished men in the medical profession, met at Niagara Falls in August. For scientific work, original research, and readable papers this society has but few equals. Its deliberations are characterized by a dignity seldom seen in medical organizations. Much of all this is due to its worthy and distinguished secretary, Dr. William Warren Potter, of Buffalo, N. Y. Outside of his duties as an officer of the society, he always finds time to contribute a paper full of elegant diction, scientific truths, and a finish that but few are equal to. The association was presided over this year by that distinguished surgeon and polished gentleman, Dr. Ross, of Toronto, Canada. It goes without the saying that he made an ideal presiding officer. The association meets next year in Pittsburgh, and will have as its president Dr. Charles A. L. Reed, of Cincinnati, than whom a better selection could not have been made.

J. M. M.

MATHEWS' QUARTERLY JOURNAL

—OF—

RECTAL AND GASTRO-INTESTINAL DISEASES.

"Alis Volat Propriis."

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Editors Mathews' Quarterly Journal, Box 434, Louisville, Ky.

MATHEWS' QUARTERLY SPECIAL TO THE AMERICAN MEDICAL ASSOCIATION AT DENVER.

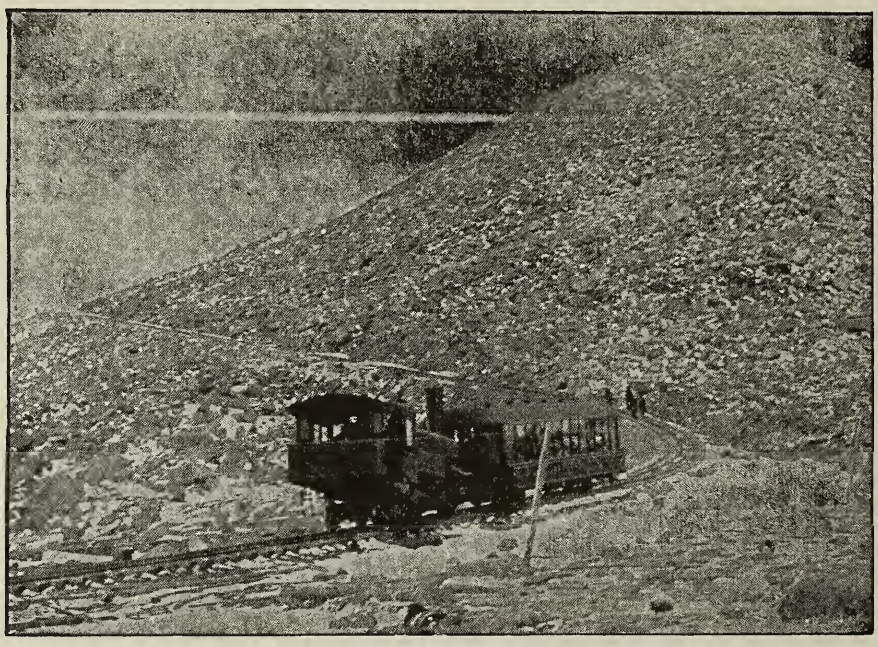
Already the Committee of Arrangements, with genial Dr. Graham at its head, for the Denver meeting of the American Medical Association is actively at work, and present indications point to an exceptionally large and enthusiastic meeting.

A feature which will be appreciated by all the members of the Association is the assurance given out from this committee and from the special committee on railroads, appointed at the Philadelphia meeting, that the rate this year will be one fare for the round trip, with a thirty-day limit. Although this is very early to announce such good news as a positive fact, the chances are more than one hundred to one that the roads will grant it, and more than likely a much cheaper rate will be had.

Denver is the ideal convention city of the United States, with a population of nearly two hundred thousand, its massive business blocks, admirable hotels, and elegant private residences indicating refinement, wealth, good taste, and good government. While those who attended the meeting at Philadelphia were aware that there was some opposition to the selection of Denver as the next place of meeting, it was only on account of its inaccessibility to most members who live east of the Mississippi

River because of the railroad fare; but, with the assurances that the roads will be as liberal as we have the assurances they will be, there could not have been a better selection made.

Besides the many beauties of the city of Denver itself there is the magnificent mountain view from the city from Long's Peak on the north to Pike's Peak on the south, and the invigorating climate is justly renowned everywhere.

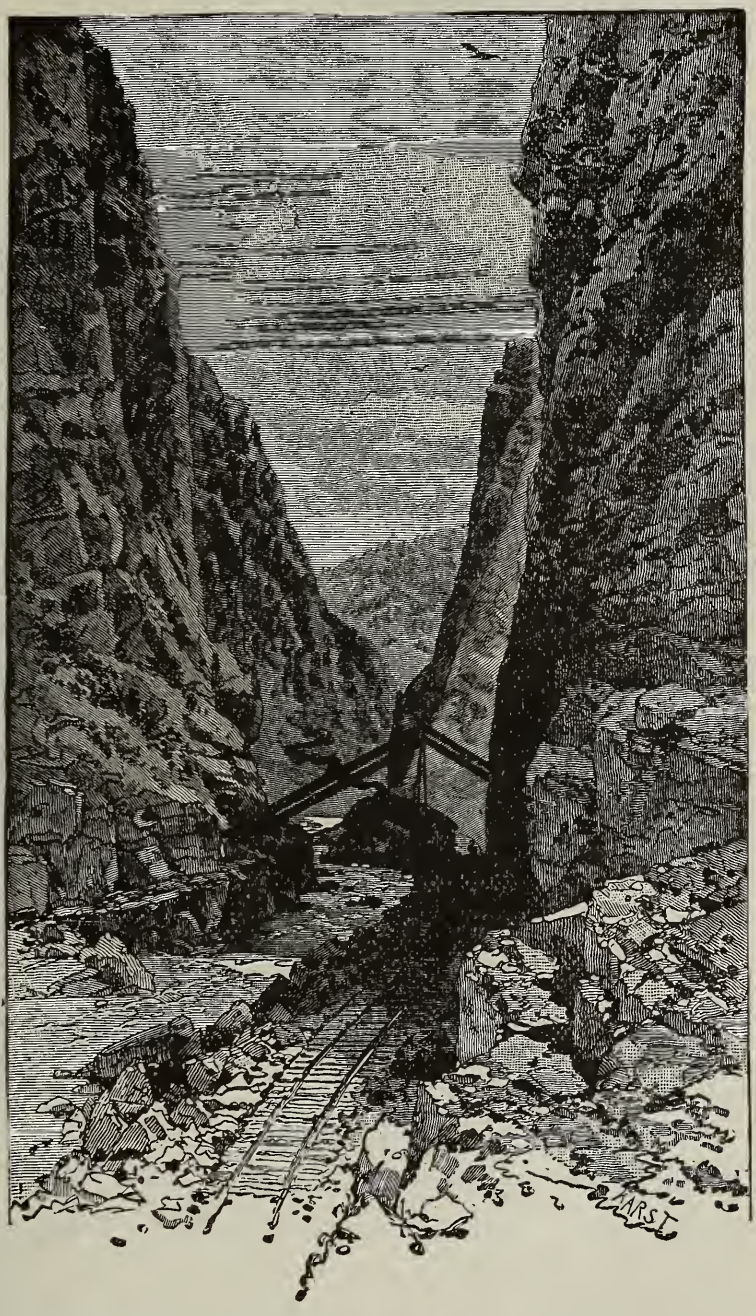


PIKE'S PEAK COG ROAD—NEARING THE TOP.
View is above timber line, and shows the rugged condition of the top of the Peak.

It is too early as yet to give any of the plans of the Committee of Arrangements, but it may safely be said that Denver will not be outdone even by Philadelphia, which was on its mettle because of the anniversary of the Association, and which made a record for hospitality which will be difficult to equal.

There will be a special train out of St. Louis to Denver, run under the auspices of this journal, and will be known as the MATHEWS' QUARTERLY SPECIAL. Arrangements will be made with the contributing lines from the Central, Eastern, and Southeastern States to sell tickets from these points via St. Louis, where the members will join the SPECIAL. The advantages offered by this arrangements are obvious, for all the details of

tickets, sleeping-car reservations, baggage, etc., will be attended to without any care or responsibility on the part of the pas-



sengers. Special vestibule sleeping-cars and dining-car will be provided, and the train will be run on special time, thus avoiding the annoyances of the regular stoppings.

Announcement is made thus early of these plans, although not fully matured, in order that the members may bear it in

mind. At a later date a communication will be addressed them giving details of the trip, expenses, excursions from Denver, and side trips which are innumerable.

Bear in mind MATHEWS' QUARTERLY SPECIAL.

BEING President of the State Board of Health of Kentucky, I am frequently solicited by physicians to indorse private hospitals and sanitariums for publication. In all deserving instances, where ethical principles are observed, I am pleased to do so. Recently I have been embarrassed by a physician of this city, who is establishing a private hospital for the opium habit. I deem it only just to myself to state that when my indorsement was obtained I was not made aware of the methods to be pursued. I have had my name stricken from the list of collaborators of the Louisville Medical Monthly, and have withdrawn my indorsement of the sanitarium referred to. J. M. MATHEWS.

With Our Exchanges.

DISEASES OF THE RECTUM.

Goldsmith, Wm. S., Atlanta, Ga.: Remarks on Fistula in Ano. (*Atlanta Medical and Surgical Journal.*)

Dr. Goldsmith states that individual experience has amply demonstrated that only the most radical and thorough technique is productive of the permanent results so earnestly sought, and any deviation from this rule is most likely to redound to our discredit.

The incision of all fistulous tracts and sinuses and the complete section of the sphincter muscles with the knife is the only method by which we can, with considerable certainty, assure the patient that the operation will result in a rapid and successful cure. The methods of ligation and chemical irritation will not therefore enter into the discussion. The fallacious methods advocated by the older writers can not be other than productive of most unsuccessful and humiliating results. For instance, Hamilton, in his "Principles and Practice of Surgery," says:

"The probe or somewhat flexible groove director being now thrust into the rectum and brought out at the anus, the operation is completed by dividing the intermediate tissues. Having cut the sphincter, it only remains to lay a small piece of lint between the margins of the wound and place the patient in bed."

Dr. Mathews, in his book on "Diseases of the Rectum," corrects this proposition in the following admirable manner:

"To illustrate how erroneous the advice is, allow me to cite a case: If an abscess in the ischio-rectal fossa has left a sinus which runs directly into the bowel, and from this a branch fistula runs out into the perineum, and another diverges from the main channel into the buttock, no such operation as is described by Hamilton would effect a cure. It is the smallest part of the operation to lay open the tissues which lie over the main sinus. How often is it that the surgeon is disappointed in the wounds refusing to heal after an operation for fistula, and an investigation reveals that it is due to a small sinus or pocket that has

been overlooked! I am sure, after a long experience in dealing with this operation, that in the majority of cases operated upon, if a single sinus is left, a good result will not be obtained. In other words, the inflammation excited will not be sufficient to eradicate the branch fistula. The flaps or thin edges of the wound alone, if left, would prevent good union."

The author states that he has yet to see a wound made in the area usually involved fail to promptly and satisfactorily granulate, provided it has had the benefit of a thorough eradication of all morbid tissues. To further elucidate this point, suppose all branches and pockets have been opened, should the operation be pronounced completed? He differs from the authorities quoted who advise the excision of the whole bottom of the wound, not being satisfied with simply scraping out the sinuses, believing that the careful use of the Volkman spoon and hydrogen dioxide is far preferable. He incises the main tract of all sinuses, making a prolonged search for pockets, trims away the overhanging edges of skin along the entire cut area, paying particular attention to the edges and vicinity of the original external apertures. This is followed by a thorough curettage of the bottom of the sinuses and the removal of the the so-called pyogenic membrane. After irrigation and sponging until area is dry, the hydrogen dioxide is applied in the form of a spray from a hand atomizer. On account of the acid reaction of the dioxide used it checks the otherwise profuse oozing accompanying simple curetting or excision.

Where there are two or more internal openings into the bowel, widely divergent, sever only one at a sitting. If the openings are in close proximity, the exercise of some ingenuity may be practiced, and virtually one cut through the muscle will suffice.

If the sphincter muscle is not stretched, the spasm caused by the irritation of the wound remains unrelaxed, which mere section of the muscle does not abolish. By thoroughly and carefully stretching the muscle, with the intention of relaxing each individual fiber, the nerve ends gain their freedom and the pains and reflexes are obliterated.

The muscle, having had a good rest, does not now resent the process of repair, and joins in with increased vigor toward the

accomplishment of a rapid recovery. The divulsion of the sphincter muscles is also especially indicated in operations for hemorrhoids, and in fact all operations in and about the rectum where physiological recuperation of functional activity is so essential to a cure.

The actual cautery is a most valuable adjuvant in the treatment of old sinuses already operated upon, and through some error of management or the run-down condition of the patient fail to respond to our efforts to heal. There is no agent, in my judgment, so material in stimulating granulation to new and active growth. Patients are usually greatly debilitated as the result of old fistula, and sometimes make exceedingly slow progress toward regaining their wonted health.

A mercurial in the form of the protoiodide—in one-eighth to one-fourth grain—may be given these patients with happy effects. It is an excellent tonic, when combined with extract of gentian, and is beneficial in toning up the liver, thereby rendering the use of laxatives and enemata unnecessary.

In regard to pulmonary tuberculosis and its influence on the performance of a radical operation in this condition, if the patient be strong enough to take the anesthetic and resist the shock attendant upon an operation of such magnitude, we should not be deterred from rendering such operative assistance as our judgment dictates.

Welch, J. F., Salisbury, Mo.: Some Observations on the Treatment of Hemorrhoids. (*Kansas City Medical Index*, No. 211.)

The hemorrhoidal plexus, the seat of this malady, is located not deep in the connective tissue of the rectum, but, on the contrary, is found imbedded just beneath the mucous membrane lining the same. These veins are emptied through three distinct canals, first the superior hemorrhoidal terminates in the inferior mesenteric. Second, the middle and inferior in the internal iliac vein, the latter establishing a direct communication between the portal and general venous system. These veins are destitute of valves, thereby allowing the column of blood to be superimposed upon this venous plexus, which in turn produces a dilatation and increases the surface over which the blood must pass, proving

again that well-established rule in philosophy, "The wider the stream, the slower the current." These anatomical reasons together with exciting causes sooner or later lead us to stasis, organizing of clot, and a pile tumor the result. Now that we have the tumors, what are the methods for their removal? The latest operation recommended, I believe, is that of Whitehead. His operation consists in preparing the patient as in other methods and dissecting away the entire mass of veins, including the overlaying mucous membrane of same. The bleeding vessels are twisted or ligated, and the free edge of the mucous membrane brought down and stitched to the margin of the cuticle. There are a number of objections to this method.

Pollock's method of crushing is highly recommended by Mr. Willett of St. Bartholomew's, also by Mr. Allingham of St. Mark's, London. The manner of its performance is as follows: The patient is placed under an anesthetic, rectum well flushed with an antiseptic solution, then dilated to its utmost, tumors seized and drawn down, mucous membrane and integument clipped about its base, grasped betwen the jaws of a powerful right-angle clamp, which is closed gradually by a heavy screw in the handle. Tumor is then excised, clamp remains in position two minutes, when it is removed and another tumor treated in the same manner until all are removed. The greatest objection to be found to this was its slowness of performance. No hemorrhage followed the cases observed. All are more or less acquainted with the clamp and cautery. It is recommended and employed by all leading surgeons of this country and Europe as well, and especially is indicated where there is a redundancy of tissue. The contraction of the cicatrix tends to lessen the caliber of the rectum. The operation that stands condemned by all surgeons, and justly so too, is the injection method. Mr. Allingham says, "I have tried the injection plan in many cases, but the result was much pain, more inflammation than was desired, a longer time, and results doubtful."

The operation that knows no failure, when success can be obtained, is the time-tried ligature and excision. It is adapted to the widest range of cases, the most easy of performance, least danger attending it, and as little pain as any other considering its magnitude.

HAWLEY, D. C., BURLINGTON, VT.: DISEASES OF THE RECTUM. (*International Journal of Surgery, Janury*, 1897.)

The original paper was the address on Surgery read before the eighty-third annual meeting of the Vermont State Medical Society, and the author was prompted to select the subject because he very much desired "to see it elevated from a position of odium to its proper place in the estimation of the profession. There has been a feeling which was ever too far-reaching that diseases of the rectum belonged properly to the domain of the charlatan, and regular practitioners who have failed to give proper study to this class of diseases have shrunk from the reputation of giving special attention to diseases of the rectum."

This fact is accounted for in the anatomical structure of the parts, which we will briefly consider. The rectum is about eight inches long and is composed of three coats, the serous, muscular, and mucous. The serous coat covers only the upper two thirds of the rectum, while the muscular and mucous are continuous throughout its length. It is with the portion which has no peritoneal covering that we have to deal in the majority of cases of rectal disease.

The muscular coat is composed of two layers, the outer or longitudinal and the inner or circular layer. Common ailment and one in which pain and suffering are almost constant factors, and furthermore, because in no field of our work do proper measures promise greater relief.

I know of no class of diseases in which the surgeon is able to give a favorable prognosis, with more certainty, than in diseases of the rectum. And from my observation I believe that three quarters of all rectal diseases fall within the category of surgical cases. For a cure we must look to surgery, and must not be satisfied with temporizing measures. I have mentioned pain as a symptom of diseases of the rectum, and I wish in passing to emphasize the fact that in almost every instance rectal pain means rectal disease. Possibly the pain may be reflex, but in my opinion, in the large majority of cases, rectal pain points to a rectal lesion.

On the other hand, the degree of the pain is not an index to the severity, but rather in a general way to the location of the trouble. I believe it is a well-established fact that the nearer

the anal margin the diseased condition is located, be it carcinoma, ulceration, or hemorrhoids, the greater is the pain, and, *per contra*, that lesions high up in the rectum are accompanied by little or no pain. In other words, lesions situated within the sphincterial area are usually accompanied by great pain, while those beyond it are not so painful, which fact may be accounted for in the anatomical structure of the parts.

The rectum is the only portion of the alimentary tract which is supplied directly from the cerebro-spinal system, receiving also fibers from the sympathetic system.

The lithotomy position is the most desirable for examination in all cases, the Sims position being suitable for examination of the lower portion only.

The author does not believe that it is as easy as some authors state, that internal hemorrhoids, internal fistulous openings, and ulcers are easily diagnosticated by means of a digital examination—being made out in the vast majority of cases by a speculum examination only—but later states, "as regards speculum examinations I will say that I have never employed them to any great extent, and that I use the speculum less now than formerly."

The majority of cases of rectal disease may be diagnosed without the use of a speculum, and it is only in occasional cases, and as a means of verifying a diagnosis made by digital examination, that a speculum becomes a necessity. A wire speculum is recommended, as a solid one covers up too great an area of the rectum.

An anesthetic [presumably a general anesthetic is meant—Ed.] is recommended in all surgical operations on the rectum and contiguous parts. It is most positively asserted that antiseptic work is possible in operations in this department of surgery.

As to the operation for hemorrhoids the author prefers that by ligature, in which an incision is made prior to the application of the ligature. Dilatation of the sphincter is considered an all-important preliminary step in the operation. The operation by ligature is considered much the safest.

As to ulceration, the author states that all cases fall into the category of simple, syphilitic, or tubercular, the greater number being due to syphilis.

M. Reglus. Stricture of the Rectum. (*Le Progres Medical.*)

In two cases of stricture of the rectum he claims to have obtained the very best results from dilatation. The first was one in which there existed just above the sphincter a transverse bridle-like strand and a diaphragm, above which arose two fistulæ.

Still higher up was found a series of masses more or less pedunculated with numerous ulcerations, all seated above the constriction. At the end of eleven days' dilatation with Hagar's bougie, made possible by the use of cocaine, the previously existing discharge had disappeared and the ulcerations healed, the strand above the anus having been resected.

In the second case, of syphilitic origin as the first, there was found at the distance of five or eight centimeters above the sphincter a constriction, vascular but resistant and sclerotic; above this were found ulcerations and fungosities.

M. Reglus introduced the bougies one after another up to No. 11, but No. 12 he could not pass. He then introduced his finger and made four incisions, so that on the day following he was able to proceed to No. 16, later to No. 24, and by the twelfth day the patient was discharged as cured.

M. Quinu, at a meeting of the Surgical Society, stated that in all rectal constrictions of syphilitic origin there are but two elements, the rectal tenesmus and the constriction, which influence one another. He claims further that the excellent results obtained by M. Reglus were not arrived at solely by the practical dilatation, but he called to his aid not only incisions but local treatment by cocaine and warm injections. M. Reynier begs to add a third element to be overcome, namely, the spasmodic one, which yielded so promptly on the application of cocaine, hence the ease with which the Hagar bougies were passed. F. B.

Woodman, Milton S., West Lebanon, N. H.: Congenital Absence of Anus and Rectum. (*Atlantic Medical Weekly*, July 24, 1897.)

The child was born July 14th, of a primiparous mother. It was asphyxiated, and gagged and retched frequently, and would not nurse when put to the breast. The child did not pass any

urine in the next twenty-four hours, nor did its bowels move, and when an endeavor was made to introduce a soap suppository no anus was found, a smooth, round surface with no depression being found where there should have been a sulcus. Small amounts of meconium and gas were being passed by the urethra.

An operation was decided upon at once, an incision being carefully made, when the gut was located near the tip of the coccyx by the child's straining, which he did constantly. The membrane was grasped by a pair of forceps and at once punctured, when a large amount of meconium escaped with gas and urine. The bladder lay just beneath the gut in the pelvis, and communicated with it by a fistulous tract.

The tissues were dissected away from the gut, which was brought down through the enlarged opening and stitched to the muscular fibers just inside the skin.

The next day the child had five passages from the bowel, the urine, however, passing through the fistulous tract into the bowel, none passing from the penis. A catheter was passed through the urethra to ascertain if there was any retention, and it passed out through the bowel.

The child did uninterruptedly well until four months later, when he had a simple diarrhea which responded to treatment promptly, but five days later, when summoned, it was found that the child had not had any movement since the last visit, and examination showed that the anus had closed, the child constantly straining.

A second operation was performed at once, cutting through tough, cicatricial tissue until fecal matter began to exude. The fecal matter was being passed through two fistulous passages on either side of the incision. A pouch of considerable size was found just inside the occluding membrane, through which a sound was passed into the bladder, which was in normal position, and through the urethra. A small glass test tube was passed into the incision to prevent its closing again, which was removed every time there was a movement and cleansed, then re-inserted. This was done for several weeks until the mother was unable to replace it. A sphincter had been formed which contracted tightly, and had to be stretched several times. The urine passed at times through the rectum with the feces.

The child seems as well as any other child, and is well nourished.

(The remarkable portion of the report is the following, which is reproduced verbatim, headed by the author "Pre-Natal History." No further comment is necessary.—Ed.)

During her pregnancy the mother had moved twice, had *la grippe* and measles, and went to New York City to attend a murder trial as witness; had quarreled with her mother-in-law and sister-in-law, which was the cause of one removal, and had quarreled with one of the neighbors in the town to which she moved. Was exceedingly constipated, and had an almost insane desire to sit on the stool and strain. She has since given birth to a normal child.

Snow, Herbert, London: The Extirpation of High Rectal Cancer. (*British Medical Journal.*)

The following case is reported with remarks:

H. B., aged fifty-seven, coachman, applied on May 5, 1896, with an advanced cancerous infiltration, apparently of four to five years' duration, high up the rectum. The forefinger could barely touch the lower border of a hard, woody mass, implicating the entire circumference of the gut; the growth was, however, very mobile. Cutting down on this in the usual way with gentle traction I made a small longitudinal incision through the diseased part, passed my left forefinger within the bowel, and was thus enabled to pull down the mass, dividing the healthy tissues above upon the finger-tip as a guide. Six inches were removed. The man made an uneventful recovery, and though troubled with fecal incontinence remains free from any trace of "recurrence."

Remarks. If a malignant lesion high up the rectum be fixed, no operation will effect its extirpation; if movable, it will, I think, nearly always be found possible to radically excise it by the above plan without resort to the very severe measure which bears the name of Kraske, as I ventured to point out in a recent discussion at the Medical Society. Volsellæ always tear through, whereas the finger thus used brings down without difficulty the lesion, while also controlling hemorrhage. There can be no more risk of sepsis than is involved by section of the bowel in any other mode.

EDITORIAL.—CANCER OF THE RECTUM. (*Medical News*, Vol. lxxi, No. 7.)

"In a paper on this subject, read by James P. Tuttle, of New York, before the Chicago Academy of Medicine, January 8, 1897, the following facts are made clear: Of 487 excisions of the rectum for cancer done before 1885 by the perineal method, 22.4 per cent. died from the operation; of 512 cases done by the sacral method from 1885 to 1892, 20 per cent. died from the operation; while of 257 cases operated upon since 1892, most of them by the sacral method, 11.5 per cent. died from the operation. The mortality for the future then may be counted as less than 10 per cent. It is less than this for the perineal operation and somewhat more for the sacral operation. The former should therefore be chosen in all cases in which the disease is located sufficiently low down to permit of thorough and complete removal.

"With regard to prognosis, nearly 10 per cent. of the 219 cases operated upon which could be traced have passed three years without recurrence. As recurrence after that period of time is very rare, these patients may be regarded as cured. About 70 per cent. of the remainder have as yet had no recurrence in periods varying from a few weeks to over two years.

"The outlook with reference to prolonged life is even more satisfactory. In the 219 cases traced, the average duration of life was, up to the time of report, two years and three months. As 181 of them are still alive, it is evident that the average duration of life after the radical operation is considerably greater than this; and what is still more important, these patients are all sustained and cheered by the hope of cure until recurrence actually appears. The average duration of life without operation is about one year. After colotomy, even if the life is prolonged—a claim not made good by statistics—the patient has absolutely no hope of escaping the disease.

"The most frequent cause of death after the operation is shock, and the second in order is septic peritonitis. These two causes accounted for 17 out of the 31 deaths. The others were due to anemia, 3; iodiform poisoning, 2; exhaustion, 2; hemorrhage, 1; empyema, 1; cerebral complication, 2; unknown, 2; and suppression of urine, 1.

"The lack of fecal control, which must evidently follow if the sphincter is removed, may be avoided, at least temporarily, by Gersung's plan of twisting the rectum before suturing it, or by bringing the rectum through between the fibers of the gluteal muscle, a method advocated by Jænnell and Willems.

"As a palliative measure, excision is far more successful and beneficent than any other means of treatment. The writer can see no good grounds either in the theory or practice of performing a preliminary colotomy. In order to avoid sepsis, he emphasizes the rule, 'During operation keep the fingers out of the rectum, and do not open it until the peritoneum is closed.'

"This elaborate article must have required years of careful research and investigation into the literature of the subject, and is another indication of the amount of valuable information each specialty has in store for one who investigates it thoroughly."

PARROTT, JAMES, KINGSTON, N. C.: THE SURGICAL TREATMENT OF HEMORRHOIDS. (*North Carolina Medical Journal*, July 5, 1897.)

For the external hemorrhoid the author advises the simple incising after thorough cocainizing.

The carbolic-injection treatment of the internal hemorrhoids is condemned, having used it in three cases seen in consultation and against his will. In two of these there was great suffering from pain and hemorrhage, and in the third case an ulcer of the rectum resulted. Few cases, in the opinion of the author, are severe enough for the Whitehead operation to be indicated, which operation is often followed by a stricture of the rectum, ulcers, fistula, pyemia, and phlebitis.

Dr. Parrott prefers the ligature method to either the Whitehead or the carbolic-injection methods, but states that this is outclassed by either excision or the clamp and cautery. As objections to the ligature method the following are offered: It is difficult to safely and accurately apply the ligature to insure sloughing of the pile mass; a great many times it is necessary to do another operation to remove the ligatures which do not come away; the after-treatment is never short of two weeks; there is great danger from exposure to pyogenic germs; stricture and ulcer are more often met with as sequelæ than is admitted;

in a fairly large minority of cases the ligature method will fail of cure.

The author's preference in operating on the venous externo-internal pile is by the method of simple excision. The sphincter is stretched, the lowest pile caught up in a rat-tooth forceps, the pile cut off, and any bleeding vessels twisted. To prevent further hemorrhage the rectum is packed with gauze soaked with Monsel's solution diluted. Thirty-six hours after the operation the dressing is removed, the anus irrigated, and an antiseptic dressing applied with a T bandage. The bowels are allowed to move on the third day, the patient rarely remains in bed longer than twenty-four hours, the after-pain is rarely severe, and post-operative hemorrhage is never troublesome.

Bear in mind Mathews' Quarterly Special.

GASTRO-INTESTINAL DISEASE.

Ashby, Henry, Manchester, Eng.: Congenital Stenosis of the Pylorus. (*Archives of Pediatrics*, July, 1897.)

The following history is reported:

The child was born plump and healthy, was fed at the breast, and seemed well for a week. At this time vomiting began, large

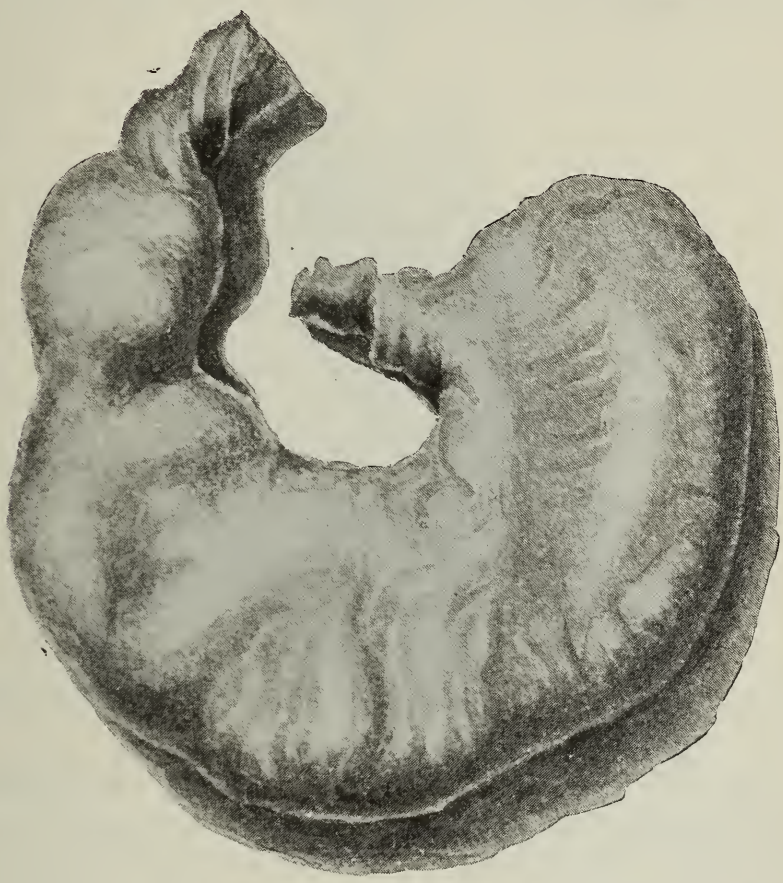


Fig. 1. Congenital stenosis of pylorus. The muscular walls of the stomach are much hypertrophied and sacculated in places. (Life size.)

quantities of food which had apparently accumulated in the stomach were pumped up, the vomiting continuing till the stomach was empty. The same thing was continually repeated; the stomach retained the breast-milk for a time, and then vomiting commenced again, and more vomit, as the mother said, seemed to come up than could be accounted for by the food which had been taken.

A change of foods made no difference in this condition. The vomit was always sour-smelling but never bile stained, the stools were small and constipated. The infant quickly began to waste, and in a few weeks was greatly reduced. A few days before death convulsions occurred, followed by drowsiness, and later the respiration was typically Cheyne-Stokes in character. The fontanelle was sunken and the temperature subnormal; death occurred in seven weeks. No tumor could be felt at any time.

At the *post-mortem* the brain was found congested. The stomach was removed for examination. Its walls were found

FIG. 2. Section of the pylorus, showing narrow channel, hypertrophy of muscular fibers and hyperplasia of the mucous membrane. (Life size.)

much hypertrophied; there was some irregular contraction of the muscular fibers, giving the stomach more or less of a sacculated appearance; at the pylorus there was a hard, rounded mass, 2 cm. in diameter, feeling very much like a scirrhus tumor. (See Fig. 1.) The contents of the stomach could with difficulty be squeezed through the pylorus. An internal examination showed the mucous membrane to be red and swollen, with an excess of mucus, a condition no doubt due to a catarrh. The pyloric opening was 25 mm. in diameter, and continued at about this caliber for 2 cm. A section through the pyloric walls showed the thickened walls to be made up in part of swollen mucous membrane, but the greater part of the swelling consisted of

hypertrophied muscular tissue. (See Fig. 2.) Under a low power the epithelial layer is seen to be in a condition of hyperplasia and proliferation, the submucosa is also swollen, and the circular layers of the muscular tissue much hypertrophied. (See Fig. 3.) A section of the muscular wall of the pylorus is seen in Figure 4; the tissue is made up of muscular and much fibroid tissue.

From a number of cases referred to by the author, he states that the symptoms which are present are fairly distinctive in

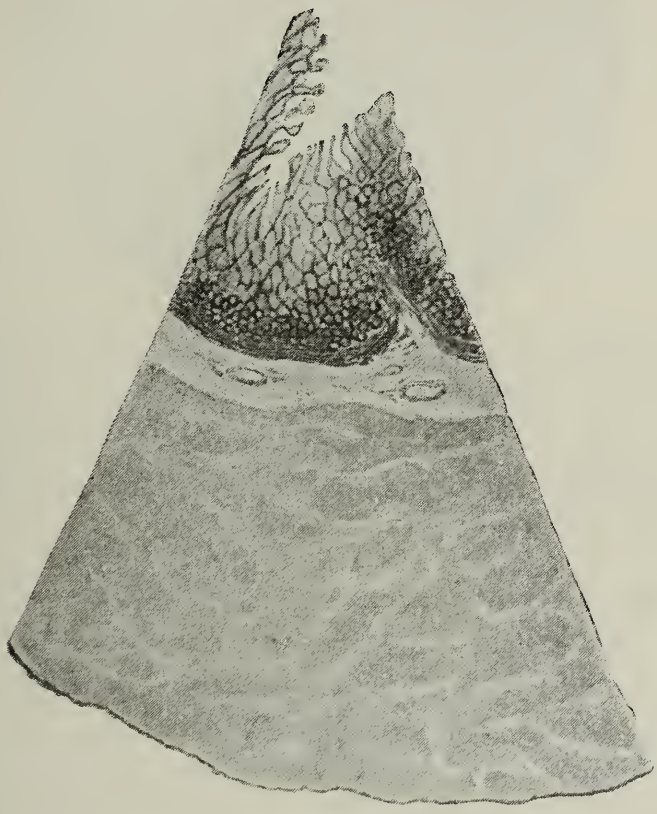


FIG. 3. Section of wall of pylorus (12 diam.), showing hyperplasia of epithelium, increase of connective tissue in the submucosa and marked hypertrophy of the circular muscular fibers.

these cases. At first there might be a doubt as to whether there was a simple catarrhal gastritis or a catarrh which is secondary to some form of obstruction. The most characteristic symptom is the vomiting, which comes on as a rule in about a week, occurring about once a day at first, several meals being retained, then every thing being rejected; the character of the vomiting is also of importance, as it is with great force; the vomited matter is sour, but not biliary. The infant rests only when the

stomach is empty, the intestines are mostly collapsed, the stools are small and constipated. A tumor may be felt, but not as a

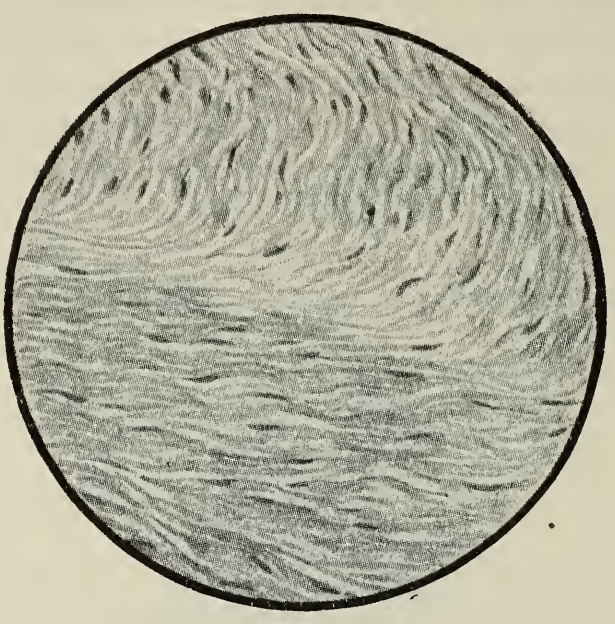


FIG. 4. Section of muscular coat of pylorus (250 diam.), showing the coat to consist of muscular and fibroid tissue.

rule. The dilated stomach can be easily mapped out as a rule, and the peristalsis can be made out by palpation. The wasting is progressive and marked at the end.

ARMSTRONG, WM., BUXTON, ENG.: GASTRO-INTESTINAL TOXINES; THEIR CLINICAL SIGNIFICANCE AND THERAPEUTIC INDICATIONS. (*British Medical Association*, July 31, 1897.)

The processes which are going on all of the time in our bodies, which either in excess in formation or deficiency in elimination become harmful to comfort, are generally spoken of as "auto-intoxications."

In 1885 Gautier demonstrated that poisonous bodies, to which he gave the name of leucomaines, were formed from sound food during normal digestion, and in larger quantities and more virulent if the digestion were interfered with. These researches showed that poisonous matters were being continuously formed by decomposition of the albumin in the intestinal canal during digestion, and also in the blood and tissues by the metabolism which occurs during the functional activities of life. The normal products of digestion are poisons of considerable power, and if, through inadequacy of the organic functions, they reach

the circulation in any considerable quantity, alarming symptoms may occur.

The toxines developed in the human body are many and varied:

1. Alkaloids, divided into two groups:

(*a*) Ptomaines formed from the action of bacteria, or of ferments, on the albuminoid substance of the dead tissues.

(*b*) Leucomaines which are elaborated by the vital energy of the cells themselves.

2. The primary products of the albuminous decomposition of digestive ferments, such as peptones.

3. Acids—acetic, butyric, valeric, and sulphuric.

4. Ammonia and the ammonia compounds.

5. Leucin, tyrosin, indol, skatol, cresol, and phenol.

6. The salts of potash.

7. Bile acids.

8. Biliary coloring matters, especially bilirubin.

9. Various gases, of which sulphuretted hydrogen is probably the most toxic.

The fact that self-poisoning more or less acute is not constantly present is probably due to two factors:

1. The action of the liver, which seems to have the power, when in good working order, of destroying or modifying certain poisons and of eliminating others.

2. The antagonistic action of the poisons themselves.

The chief causes of excessive formation of these poisons seem to be:

(*a*) Defective action of the nervous system, leading to a failure of the processes of digestion, such as deficient or abnormal secretion of the various gastric and intestinal juices; or to torpidity of the muscular structures of the stomach and bowels, and a consequent loss of power to make the necessary movements. Then follows retention of food products, and consequent fermentation and putrefaction.

(*b*) The taking of food in too large a quantity, in wrong form, or as is most common, in improper combination.

(*c*) Gastric dilatation.

(*d*) Duodenal dyspepsia and atony.

(*e*) Atony of the small and large intestines.

Defective elimination and failure to burn up the leucomaines in the blood by the aid of its contained oxygen are factors of great importance. The kidneys are by far the most important organs of elimination. Much dietetic unrighteousness is forgiven to the possessor of sound and active kidneys; they

eliminate two thirds at least of the solids, especially mineral matter; also urea, coloring, and odoriferous materials, but not gases.

Bouchard says that seven toxic substances are found in normal urine:

1. A diuretic substance which is probably urea.
2. A narcotic substance.
3. A sialogenous substance.
4. A substance which contracts the pupil.
5. A heat-reducing substance.
6. An organic convulsive material.
7. An inorganic convulsive material, probably potass.

The liver possesses the important function, among others, of destroying the poisonous properties of peptones, ptomaines, and other substances produced during digestion; and possibly, also, the toxic products of tissue waste. Any thing, therefore, which interferes for any length of time with its functions must cause more or less deterioration of the general health.

By the skin is eliminated water, salts in small quantity, carbonic acid, and some volatile fatty acids; and it is interesting to note that in many hypochondriacs fatty acids are eliminated more abundantly by the skin than in normal health. By the lungs are eliminated poisonous substances, such as carbonic acid, and also volatile poisons accidentally introduced into the digestive canal. The bowels carry off much toxic matter; this toxicity is due chiefly to potassa and ammonia, and in a less degree to the union of organic principles, especially alkaloidal substances.

Cases of self-poisoning may be divided into two groups, acute and chronic. The first is represented by certain phases of typhoid fever and cholera, and by the more acute forms of uremia; the second, with which we are chiefly concerned at present, by the slower but not less harmful changes going on more or less hourly within the bodies of many of those around us.

Auto-intoxication is an important factor in the causation of the following diseases:

1. Gout, especially the so-called latent and neurotic forms of that disease.
2. Rheumatism.
3. "Uric-acidemia" and oxaluria.
4. The nervous irritability attending dyspepsia, especially when gastric dilatation is present, and also the "sinking" feeling some two hours after food, complained of by many neurasthenics.

Some forms also of the following ailments:

5. Rheumatoid arthritis.
6. Asthma and wheezing.
7. Vasomotor disturbances, as cardiac irregularity and neuroses, false angina, pseudo-Raynaud's disease.
8. Tetany.
9. Urticaria.
10. Migraine and insomnia.
11. Hypochondriasis and even mental derangement.

There is more or less self-poisoning present in many cases of gout, whether we incline to the view that gout is due to an excess of animal food, to maldigestion of the carbohydrates, to the imprudent mixing of foods of different classes; each of these factors may form toxic material, which in all probability passes on to the kidneys, where it forms uric acid, excess of which if reabsorbed into the blood causes the phenomena of gout.

It is urged that any one of these conditions is capable of giving rise to a condition of auto-intoxication.

Dilatation of the stomach, a much more frequent condition than generally supposed, leads to the formation, among other toxines, of large quantities of acetic and butyric acids. Abnormal conditions in the duodenum cause increase of indol, which points to rapid decomposition and bacterial activity. Sulphuretted hydrogen is frequently formed in considerable quantity in the large intestines. It is a most powerful poison, acting upon both the nervous system and the blood, producing depression, headache, vertigo, and disturbances of sight and hearing.

To get exact indications through the medium of the urine is a most difficult matter, for many alkaloids can only be detected by chemical processes so long, complicated, and delicate as to make them of little use in clinical work. There is, however, a port-wine colored reaction with ferric chloride which is frequently found in cases of gastric dilatation. Indican again can be detected in the urine by the chloride-of-lime test, or by the fact that it gives a purple ring with nitric acid; this shows the presence of indol in excess in the small intestine. In cases of fecal retention there is often a brown reaction with nitric acid, which Herschell found in over fifty per cent. of cases of this class. Sulphuretted hydrogen can be detected by the blackening

of paper impregnated with acetate of lead as well as by its characteristic odor, and also by the change in the relative quantities of the normal and ethereal sulphates.

The therapeutic indications are important. Remarkable results sometimes follow treatment acting upon the nervous system. It is through this that such factors as change of air and scene, visits to elevated inland resorts, or to the coast act. The kidneys come next in order of importance, then the liver, the bowels, the skin, and the lungs. The vapor or hot-air box is of great service in helping to carry off the poisonous substance by the skin.

The drinking of hot water when the stomach is empty is a most excellent practice; it carries away with it much toxic material from the digestive organs, and ends by flushing out the kidneys

The liver needs stimulation in most cases, and there is no better remedy than a single grain of calomel given every second or third night, followed by a full dose of the phosphate or sulphate of soda in hot water the next morning fasting; the calomel acts also as a duodenal antiseptic.

The state of the bowels should be carefully watched. A saline aperient in the morning is an excellent routine practice, but if much atony be present small doses of aloin and cascara with strychnine and belladonna are indicated. If fecal retention is present, large enemata passed by means of the long tube into the descending colon are necessary.

In gastric dilatation many antiseptics have been tried; among others, creosote, guaiacol, iodoform, carbolic and sulphurous acids, and the sulphocarbolates. Most of these possess the disadvantage of being unpleasant to take, and apt to repeat.

It is often found that a weak solution of fuming hydrochloric acid (eight to ten drops in six ounces of water) freshly mixed, just before each meal, is of considerable service. It is a most powerful antiseptic; half of the quantity named is taken in divided doses while eating, and the remainder at the end of the meal. Washing out the stomach is frequently useful in severe and obstinate cases; it immediately relieves severe migraine due to gastric dilatation.

When duodenal fermentation is present calomel and betol are the most useful antiseptics. Taka-diastase in two-and-a-half to

five-grain doses, taken with meals, greatly assists the digestion of the carbohydrates. Salol sometimes causes unpleasant symptoms. The long-continued administration of salicylic acid affects the nervous system, and the salicylate of bismuth is not sufficiently powerful unless given with betol.

As an intestinal disinfectant it is desirable to use some drug which is only sparingly soluble, so as to pass uninjured through the stomach and duodenum; or to have it made into pills specially coated to resist the action of first digestive juices. In that case it often resists also all other efforts to dissolve it, and the drug passes from the body with its coating intact.

Naphthaline in doses of four to eight grains is very valuable. Methylene blue is also of service in two-grain doses once or twice a day. Charcoal fixes the coloring matter of the bile, takes up gases, and prevents the absorption of some of the products of putrefaction. It is a remedy of great value when given in cachets. Among other therapeutic measures indicated are mentioned the needle, or circular spray bath, and the double mustard pack. This is made of mustard bran, one portion being applied over the nape of the neck and down the spine, and the other over the stomach and liver every second day for twenty minutes.

Resisted Swedish exercises should not be lost sight of; bodily exercises, as walking, cycling, golf, are useful. Inhalation of compressed air or of oxygen decreases the toxicity of the urine. Dietary in auto-intoxication is of importance; red meat should be forbidden in some cases. In amylaceous dyspepsia, with or without gastric dilatation, a meat dietary is often efficacious.

ARNOLD, J. P., PHILADELPHIA, PA.: A NEW TEST FOR LACTIC ACID IN THE GASTRIC CONTENTS AND A METHOD OF ESTIMATING APPROXIMATELY THE QUANTITY PRESENT. (*Journal of the American Medical Association.*)

In view of the value of the detection of lactic acid in the gastric contents, especially in the diagnosis of gastric carcinoma, the importance of which has been increased by the later work of Boas, and because of the uncertainty and unreliability of Uffelmann's test, the following is presented:

The test is simple and easily applied, the reaction is characteristic, the results reliable. It also affords a method of approx-

imately estimating the quantity of lactic acid present. The test solutions used are :

Solution No. 1, consisting of saturated alcoholic solution gentian violet, 0.2 c.cm. ; distilled water, 500 c.cm.

Solution No. 2, solution ferric chloride (U. S. P., 1890), 5 c.cm. : distilled water, 20 c.cm.

The method of applying the test is as follows: Into a small porcelain capsule place 1 c.cm. solution No. 1, and add from a pipette 1 drop of solution No. 2. The violet color of solution No. 1 changes to a bluish violet after the addition of the ferric chloride. To this mixture add drop by drop the filtered gastric contents. If lactic acid is present the color of the solution changes from a *bluish violet* to a *green or greenish yellow.*

Alcohol, glucose, butyric acid, acetic acid, and phosphates, in quantities below 2 per cent., do not interfere with the reaction as they do in Uffelmann's test. The reaction is not interfered with by acetone or albumoses; sulphuric, nitric, and hydrochloric acids do not give the reaction.

Delicacy of the Test. One drop of a 0.02 per cent. solution of lactic acid gives a very distinct reaction. The usual limit set down for Uffelmann's test is the detection of 0.05 per cent. If phosphates are present there is at first a reddish violet color produced, which in the course of a second or two gives way to green. If phosphates be present to the extent of 0.5 per cent. it may take two or three drops of a 0.02 per cent. solution of lactic acid to bring out the reaction distinctly.

To determine approximately the quantity of lactic acid present the procedure is as follows: It is well to prepare a 0.2 per cent. solution of lactic acid to use as a standard. Take two narrow test tubes of equal size and to each add 5 c.cm. of test solution No. 1 and 5 drops of test solution No. 2. To one tube add 0.5 c.cm. of a 0.2 per cent. solution of lactic acid ; the mixture turns green and all traces of violet or blue disappear. To the other test tube add, drop by drop, the filtered gastric contents until the color is the same shade of green as in the first tube. Comparison may be made more accurate by equalizing the volumes of the solutions in the test tubes by adding to the first tube as much distilled water as was added of gastric contents to the second tube. To get the percentage of lactic acid present,

divide 0.1 by the number of cubic centimeters of gastric contents used.

This is not given as a means of determining accurately the amount of lactic acid present, but with care the amount present can be estimated within 0.1 per cent., and to one accustomed to the use of the test a per cent. as low as 0.05 can be estimated.

Fowler, Geo. R., New York City: A New Operation for the Radical Cure of Hernia. (*New York Polyclinic*, August, 1897.)

On account of an accident in which a recurrence took place after the performance of the Bassini operation the author was led to devise this operation. In this case the sac of the newly formed hernia found its way alongside the cord, forming a direct hernia at the site of the internal ring.

The method aims at the simultaneous obliteration of the internal ring and inguinal canal, in order to accomplish which the cord is transplaced into the peritoneal cavity for a distance represented by the space extending from the internal ring to the lowermost reflection of the peritoneal investment of the abdominal wall, just behind the pubic bone.

The parts are exposed by a curved incision, commencing at the spine of the pubes. This is carried parallel with the os pubis for a short distance, this varying with the size of the individual, and thence curves to meet the groove in the skin corresponding to the general direction of Poupart's ligament. It is carried in this groove to a point corresponding to the line of the internal ring. This flap is reflected so as to expose the aponeurosis of the external oblique.

The aponeurosis of the external oblique is now incised from the external to the internal ring. The cord and sac are first isolated together, and then separated from each other, each being cleared well up to the level of the internal ring. Following the suggestion of Halsted, any large veins present in the cord are isolated and removed.

The hernial sac is now opened and its contents reduced. The sac is cut away to the level of the muscular layer of the abdominal wall, and its cut edges grasped by the forceps. The deep epigastric artery and veins are identified at the point where

they cross upon the transversalis fascia, ligated in two places, and divided between the ligatures. The index finger is now introduced into the peritoneal cavity through the neck of the sac, its palmar surface turned upward, and with this as a guide the entire space represented by the posterior wall of the inguinal canal and Hesselbach's triangle incised, this section including, from without inward, the transversalis fascia, subperitoneal connective tissue, and peritoneum. The lower angle of this incision should be placed well below the level of the pubic bone.

The spermatic cord is now transplaced into the peritoneal cavity through the gap made by this incision, entering opposite the internal ring and emerging at the lower angle of the incision. The edges of the incision are grasped by forceps and drawn forward in order to secure broad approximation of the peritoneal surfaces, and these sewn together by a "through and through" suture of kangaroo tendon. The first stitch is taken through a fold of the transversalis fascia above the point where the cord dips backward to enter the peritoneal cavity, and secures the internal ring. The suturing is continued downward until the lower angle is almost reached, just sufficient room being left at this point for the cord to emerge without infringing upon or constricting the latter. This, the new ring, if such it may be called, is placed sufficiently low to compel the cord to curve upward in order to cross the pubic bone, thus securing a bony buttress anteriorly, to strengthen this otherwise weak point.

The inguinal canal is now closed by interrupted sutures of kangaroo tendon. These include the conjoined tendon and aponeurosis of the external oblique upon one side and Poupart's ligament upon the other. The two lower sutures should include the outer edge of the pyramidalis upon the inner margin, or, if this is not present, the rectus muscle. This serves the purpose of guarding the site of Hesselbach's triangle. If the muscular structure does not readily come into place the outer attachment of the muscle may be detached to facilitate its displacement. Accurate approximation of the edges of the aponeurosis of the external oblique may be still further secured by a continuous suture, each turn of which is passed between the interrupted sutures. The skin wound is now closed and the parts dressed.

Dr. Fowler has operated on six cases by this method; two were cases of large hernia which were strangulated, and one was a double hernia. In all the uncomplicated cases the patients were allowed to walk about in fourteen days. They demonstrate that obliteration of the internal ring and inguinal canal is possible without resorting to castration, the most efficient of the formerly practiced methods of radical cure of inguinal hernia. This is accomplished by the method of intraperitoneal transplacement of the cord described.

EDITORIAL.—RECENT FOREIGN LITERATURE ON APPENDICITIS. (*Boston Medical and Surgical Journal.*)

"The subject of appendicitis has been attracting anew the attention of physicians and surgeons on the continent of Europe. At a meeting of the German Society of Surgery, held April 21st, the importance of early surgical intervention was emphasized. The French medical mind has in the past been inclined to conservatism, and it has been regarded as good practice to wait a week or longer, even in severe cases, in the hope that this peri-typhlitic abscess might be well walled in from the abdominal cavity.

"Paul Reynier, at the above mentioned meeting, advocated this procedure. In the immense majority of cases intervention should be tardy, and by this he meant put off till some time between the fifth and ninth day. He would except appendicitis in young children, which has little tendency to be attended with membranous formation and walling in of the suppuration. His experience with this disease in adults leads him to call special attention to the proneness of this disease to be followed by a peritonitis which is distinctly localized. Out of forty cases he had seen but three deaths from general peritonitis. There is therefore a great gain in waiting till the peritonitis is localized in the cecal region and adhesions are formed protecting the rest of the cavity. In exceptional cases of the fulminant character laparotomy should be performed at once as soon as the diagnosis is made.

"Dr. Louis Beurnier had little faith in the medical treatment of appendicitis. Every case of appendicitis is 'of the province of the surgeon,' and should be under the constant care and

scrutiny of the surgeon in readiness for an operation. In many cases it may be expedient to wait 'till the acute period of the onset is passed, till the general condition is improved by the injection of caffeine, and the local condition is ameliorated by the application of ice,' but the laparotomy should only in exceptional cases be deferred beyond the third or fourth day. He insists on the necessity of a free incision, prolonged well upward so as to give plenty of room for exploration. If the pus does not flow by gentle maneuvers, use care in exploring with the finger so as not to break down the adhesions. It is often better to leave the appendix *in situ*.

"Dr. F. Verchère in a paper stated that there are two types of appendicitis, both having a different pathogeny and different clinical tableaux. There is no difficulty in accepting the two types, but is not the malignant form an aggravation of the simple benign type, due to the same microbes and toxines, only intensified by causes not well understood? We know that one type is relatively benign, characterized by a phlegmon of the right iliac fossa. This phlegmon may go on to suppuration, or it may remain serofibrinous and end in resolution. The sequels of appendicitis may be those of an ordinary abscess opening externally, or especially dangerous only if it bursts in the peritoneal cavity. Cases of this type do not show a marked degree of infection. The phagocytes of the individual affected early display their protective activity in a sufficient degree to get the upper hand of their bacterial adversaries, walling away from the abdominal cavity the seat of infection; and only a localized focus of suppuration attests the mischief wrought in the *vase close* of an occluded appendix. The malignant type of appendicitis is appropriately called by the author 'intestino-peritoneal septicemia.' These cases are generally fatal, though a small percentage is saved by an early operation. Here there is intensification of the virus owing to favorable culture conditions in the 'closed receptacles' and rapid absorption of toxines with generalization of the inflammation to the peritoneum and a speedy septicemic breakdown. There may be but little localization of the mischief, and from beginning to end no suppuration.

"Paul Reclus writes on 'The Pathogeny of Appendicitis.' His paper deserves more notice than the limits of this article will allow.

"He shows that the *vase close* theory is more or less applicable to the disorder following all kinds of appendicitis; for when an inflammation is once started in that diverticulum there is, owing to its peculiar shape and situation, the greatest tendency to stagnation of its contents, thus offering the very best culture field to bacteria of the intestines, notably the streptococcus and coli bacillus. But many cases of appendicitis do not start in the appendix, but are propagated from enteritis of the colon and cecum, and it has been of late proved that appendicitis sometimes originates from general causes, as infectious fevers. But, whatever cause may have been operative, 'the structure of the appendix, its canalicular form, its nature as a diverticulum, make it the equivalent of a blind natural fistula where microbes stagnate and with exaltation of their virulence invade its walls, cause ulceration and perforation, and easily by propinquity excite grave peritonitis.'

"It is interesting to note that the differences of opinion with regard to early operation, which were and are still mooted questions in this country, are dividing surgical opinion among our foreign confrères. The trend of the best surgical opinion, abroad as well as at home, appears to be in favor of early operation in the fulminating cases; while in a very large class of cases, namely, those of most moderate severity, surgeons are learning to wait until the height of the attack is passed, when the abscess, if it forms, can be opened with comparative safety, and the appendix, if it can be reached without danger of rupturing adhesions and infecting the peritoneum, removed.

"After the patient has recovered from this operation, the appendix may, if not obliterated, and still causing trouble, be removed with comparative safety.

"There is also a large class of cases in which an exudate, although comparatively large in an acute attack, is entirely absorbed by natural processes, and no further attack may follow, or the appendix may be removed by the comparatively safe internal operation."

EDITORIAL.—PAPAIN; WHAT IS IT? (*American Therapist.*)

"Papain will give good service if prescribed with full knowledge of its power and limitations. It acts best on fibrin, and is

most active in the intestine; if a prescription is wanted with wider scope, the physician should combine appropriate doses of pepsin or diastase with the papain.

"Other drugs may also be combined with this vegetable digestant; for instance, equal quantities (say two grains each per dose) of papain and powdered rhubarb will prove very effective for indigestion and constipation. It can be added to any tonic, to intestinal antiseptic mixtures, to favorite prescriptions for dyspepsia, etc. It will prove especially valuable, plain or with bismuth and other drugs, in the summer complaints of children.

"Papain is in general use in Germany as a tape-worm remedy, and its efficiency in this way has been proved by Prof. Bartholow. It is also effective as a solvent of false membrane in diphtheria, a fact indorsed by Jacobi, Richardson, Caldwell, and others.

"We consider papain a valuable therapeutic agent; not as popular as it should be, because physicians have been disappointed through using it with incorrect notions of its powers, and partly because inert commercial stuff has been dispensed. A papain of standard quality, such as Boehringer's, which is guaranteed, proved by a test furnished in our July, 1896, issue, will yield the prescriber full and satisfactory effects within its natural limits."

Wiggin, Frederick H., New York City: Enterectomy Followed by Circular Enterorrhaphy by the Maunsell Method. (*New York Medical Journal.*)

The patient was a woman, sixty-six years of age, who had been an alcoholic for many years. A laparotomy had been done on her two years prior to admission and six months before she had received several severe blows on the abdomen, after which there had been noticed a protrusion of the abdominal wall in the umbilical region. Quite recently she had been knocked down and tramped upon by a horse, which had been followed by the formation of an abscess in the wall of the abdominal protrusion, by sloughing of the skin covering the protusion and by the formation of an ulcer about two inches in diameter. Soon after admission, while being bathed, the tissues forming the base of the ulcer had given way and allowed the escape of the intestine from the peritoneal cavity. The patient was not seen for some

hours after this occurred, and when seen several coils of ileum had been outside the abdominal wall among the bed clothes and the edges of the abdominal wound gangrenous. The protruding gut was dark, inflamed, and thickened, and held together by adhesions. As the gut had evidently been constricted tightly and also infected, preparations were immediately made for resection. First freshening the abdominal wall by trimming away the gangrenous edges and enlarging the opening, about two feet of the bowel were removed and the divided ends united by the Maunsell method. After the invagination had been reduced it was found necessary to further approximate the peritoneal coats by Lembert sutures. The abdominal cavity was thoroughly flushed with a weak solution of hydrogen dioxide, and after the gut was returned the cavity was again flushed with a saline solution, some of which was allowed to remain. The walls of the abdominal wound were approximated by silkworm gut sutures. The case progressed favorably for forty-eight hours, when persistent nausea set in with vomiting, and the belly became typanitic, which various cathartics failed to relieve. On the morning of the fourth day a small quantity of gas was passed by rectum, but the vomiting had persisted. As the abdomen was then much distended, it was thought best to reopen the abdominal wound and ascertain whether or not there was any obstruction. On making the incision the distended bowel escaped, and it became necessary to puncture it in order to relieve some of the distension. It was found that the peritoneum had become generally inflamed and that the bowel was flexed just below the point of anastomosis and was adherent, inclosing a small abscess in the mesentery. This abscess contained about a drachm of pus; it was removed and the infected area disinfected with a solution of hydrozone. This area of gut was isolated by means of iodiform gauze strips which were brought out through the abdominal wound. The patient had not rallied, and died a few hours later. The specimen showed how perfectly the bowel could regenerate in four days.

In the discussion of this report Dr. Hotchkiss said that this case showed how difficult it was to determine at operation the true condition of the gut. He had done four intestinal resections by the Maunsell method, and in one, a case of carcinoma of

the sigmoid flexure, the proximal end of the gut, although apparently viable, had been soft, and the patient had died a week after the operation apparently from an autotoxemia. A second fatal case had occurred after a resection, made wide of the gangrenous area, in a peculiar hernia case. The intestinal wound had become infected, and the patient had died in about three days. In that case there were present intestinal paresis and toxemia.

Einhorn, Max, New York City: A Report on Ischochymia (Dilatation of the Stomach). (*Journal of the American Medical Association*, August 7, 1897.)

The name ischochymia was suggested by the author in a previous article as being better adapted to the condition than gastrectasis, the name conveying the idea that stagnation of the food in the stomach is the principal symptom, and that abnormal size of the organ is of secondary importance. The cases of ischochymia are divided into the following groups:

1. Cases of ischochymia submitted to operation: (*a*) Benign stenosis of the pylorus; (*b*) malignant stenosis of the pylorus.

2. Cases of ischochymia treated by palliative measures: (*a*) Benign stenosis of the pylorus; (*b*) duodenal stenosis; (*c*) probably pure atony of the stomach; (*d*) malignant stenosis of the pylorus.

The conditions which give rise to benign stenosis can be diagnosed with a fair approximation to certainty. There were ten cases operated on; eight were cured and two terminated fatally in consequence of shock and cardiac failure shortly after operation. Seven of the eight cases have been completely cured, the other relieved, but not completely cured.

Diagnosis. The salient point in the diagnosis of this condition is the presence of food residue in the stomach in the morning in the fasting condition, the patient having taken a full meal on the previous evening. If this symptom is found to persist for a long time, we have to deal with a serious condition, and it will now be necessary to determine whether this consists in a relaxation of the gastric muscular coat or a narrowing of the plyorus; in the latter case it is further requisite to decide whether a benign or malignant process be present.

The symptoms of diagnostic significance may be mentioned as follows:

1. The dilated or abnormally large stomach.
2. The thickened and readily palpable pylorus.
3. The peristaltic restlessness of the stomach.
4. The fermentation products.

1. The abnormal size of the stomach is pathognomonic only if the organ occupies nearly the entire lower section of the abdomen and contains over three to four liters of fluid.

2. If it is possible to map out the pylorus by means of palpation as a smooth oval tumor, and if ischochymia be present and the disease has lasted over one and a half years, we can with certainty make a diagnosis of benign pyloric stenosis.

3. Inasmuch as peristaltic restlessness of the stomach occurs very rarely as a pure neurosis, this symptom is of great significance for the recognition of stricture of the pylorus, the more so as an examination for this purpose is unattended with any difficulty. The presence of this condition in connection with the existence of ischochymia speaks in favor of narrowing of the pylorus and against simple relaxation of the gastric muscular coat. The absence of this symptom is of no consequence.

4. Fermentation products (formation of lactic acid or gases in the stomach) are observed almost constantly in all cases of ischochymia. The lactic acid is found in the stomach in cases where the secretion of hydrochloric acid is considerably diminished, while the development of gases is encountered in cases in which there is abundant secretion of gastric juice. Fermentation products may be absent if stomach-washing has been resorted to several times.

The presence of bile in the stomach does not militate against the existence of stricture of the pylorus, but rather points to a rigid condition of the orifice which prevents its complete closure.

Among the auxiliary aids of diagnosis was mentioned the *gastroscope* as used by Rosenheim and Kelling.

Treatment. First recognize the cause of the stagnation of the food in the stomach. If it be due to a far advanced benign stenosis of the pylorus, or to commencing occlusion of the opening due to malignant growth, a pyloroplastic operation, pylorectomy, or gastro-enterostomy is indicated. If there is a com-

mencing benign stenosis of the pylorus, or a genuine relaxation of the muscular coat of the stomach, palliative treatment should first be given a trial, and in the event of its failure an operation can be done. The palliative treatment consists in the employment of milk, soups, finely ground farina, meat broths with egg, egg and milk; lavage of the stomach in the fasting condition, followed by a spray of a one-per-cent. solution of nitrate of silver and anti-fermentative drugs. Among the latter may be used benzonaphthol, salol, bismuth, and resorcin. When there are associated frequent vomiting and pains with intense burning sensations it is advisable to keep the patient in bed for a few days and feed by the rectum, then slowly adopt a milk diet, as follows: On the sixth day two tablespoonfuls of milk every hour, on the seventh day three, on the eighth day four, etc. Every other morning the stomach is washed out in the fasting condition to see if it is empty.

The patient may sometimes maintain a comfortable existence by the systematic use of stomach washings and the maintenance of a light and fluid diet. Such patients are menaced by many dangers and can enjoy but few of the luxuries of life, and for this reason the clinician should insist that an operation is to be regarded as the only correct procedure.

Hirsh, A. B.: Philadelphia, Pa. Can Gastric Carcinoma be Diagnosed Sufficiently Early to Insure a Cure after Operation. (*Medical and Surgical Reporter*, June 12, 1897.)

This important question was always answered in the negative prior to the introduction of the chemic and microscopic tests of the gastric contents as obtained by the stomach-tube, etc. Given the ordinary symptoms of pyloric obstruction in a patient, the presence of a neoplasm might have been surmised, but not absolutely known, until it had grown to a distinctly palpable size, and then the golden opportunity for complete removal was often past.

It required many years of patient effort and reiteration by the advocates of direct trial of the withdrawn material from the diseased organ before the profession in general gave recognition, questioningly even at first, to the method, and opposition still

exists to acceptance of the theory that we may distinguish stomach cancer largely by the absence of hydrochloric acid. The leaders of opinion in the medical centers are now pretty unanimous, however, that such a diagnosis is warranted when to absence of hydrochloric acid are added evidences of fermentation and loss of body weight with, possibly, regurgitation of food, cachexia, hemorrhage, and localized pain.

In evidence of the foregoing the following translation from the *Deutsche Medizinische Zeitung* of January 11th, is made of a case reported by Professor J. Boas to the Berlin "*Verein für innere Medizin:*"

The patient was a man, a stone mason, aged fifty-six years, first seen by him in June, 1896, for symptoms of gastric disturbance. There existed after meals a sense of weight and fullness in the stomach, with eructations and occasional vomiting. No cachexia was noticed, but there had been a progressive loss of weight of ten kilograms. Physical examination was found of but little avail in the diagnosis, and it was particularly noted that a tumor could not be felt.

Testing of the gastric contents, however, insured a more definite result and proved that the stomach was never entirely emptied, quantities of food detritus with a lactic-acid reaction being found even in the morning. Rod bacilli (bacillus vibrio) were all present. The incidental history was of a fall from a height of two meters, several years previously, striking upon the lumbar region, but no untoward symptoms were noticed at the time.

The history, the present symptoms, and the results of the examination seemed to point with considerable positiveness to the diagnosis of a stenosing gastric carcinoma. The operation performed by Professor Hahn confirmed the diagnosis, that of tumor of the pylorus, and, as this was circumscribed and without metastases, complete extirpation was done.

The course of the convalescence was a perfectly smooth one, and the patient's digestion is now perfect, the gain in weight is 15.5 kilos, and he is able to follow his usual calling. The tumor was the size of half an apple, and proved to be an adeno-carcinoma. This case shows, even though a tumor may not be felt on palpation, that it is yet possible by the newer tests to furnish

the indications for early operation which would have been out of the question prior to the recent improvements in the chemic methods.

Boas further holds that, were the surgeon to insist on the finding of a tumor as necessary for a diagnosis, the disease would reach a stage too late for total extirpation. He also mentioned two similar cases in his own experience, and three or four in that of other operators, in which the above plan permitted of early and complete removal and with definite and permanent cure.

De Garmo, W. B., New York City: Have we Found a "Radical" Cure for Inguinal Hernia? (*Charlotte Medical Journal*, September, 1897.)

The author states that the term radical cure, as applied to the treatment of hernia, has been badly misused for a number of years, being descriptive of operations more often a failure than a success.

Mention was made of the old idea of radical cure, that it meant the obstruction of the hernial sac as the essential step, and every means consistent with the safety of the patient was resorted to to accomplish this end.

The steps were traced from this to the operation suggested by Riesel, of Germany, who advocated splitting the aponeurosis of the external oblique muscle, to expose the canal, but failure followed because of imperfect closure of the parts. Then came McBurney, who opened the canal to the internal ring, clearing it of foreign matter and tying off the sac flush with the peritoneal surface. This operation failed because of imperfect closure. Marcy suggested the safety of the buried suture, and then followed Bassini's suggestions, supplying an operation apparently complete.

After dealing briefly with the causes of hernia, Dr. De Garmo gives the following description of the Bassini operation:

A slightly curved line drawn from the anterior superior process of the crest of the ilium to the spine of the pubes, represents the location of Poupart's ligament. The incision for the Bassini operation should be about three quarters of an inch inside of this line, extending from over the superficial abdominal ring about three inches upward and outward. The two underlying layers

of fascia should be cut through, revealing the aponeurosis of the external oblique muscle, which will be recognized by its white, glistening surface and the direction of its fibres. With the fascia will be cut the superficial epigastric and superficial pubic vessels, which require clamping, and sometimes subsequent ligation.

At the lower angle or the incision, if it has been properly made, the superficial ring will now be seen, usually with the hernial sac bulging up out of it. A grooved director should be slipped under the aponeurosis of the external oblique muscle at the external ring, in the direction of the canal, and this tissue split by scissors or knife, to a point opposite, or a little above, the deep inguinal ring. You now have the entire canal exposed to view, and you proceed to lift the sac and the cord, to which it is quite uniformly attached, out of its bed.

The separation of the cord from the sac, especially in hernia of the congenital variety, is the most difficult step in the operation, and some have failed entirely in its accomplishment.

The cause of failure has been, the author believes, due to making the attempt too low down.

The separation must be accomplished almost entirely by the fingers; clearing one place on the sac surface and rolling the sac in one direction between the thumb and fingers, while the cord and fascia are held between the thumb and fingers of the other hand, is the easiest way to accomplish it, and the middle of the canal is the best point to begin.

The hard and wiry feel of the vas deferens should always be borne in mind, as this will lead to the location of the cord in cases of doubt. Having obtained complete separation at one point, little trouble will be experienced in stripping the cord free up to the peritoneal surface and as far down as may seem advisable.

The sac should be opened in every case, as only in this manner can you be certain that it does not contain adherent omentum, or possibly intestine. One operator has been so unfortunate as to tie a loop of bowel in the neck of the sac by neglect of this precaution.

It is well to have the assistant tie the neck of the sac while the operator holds one or more fingers in its neck to avoid possible protrusion under the ligature.

After tying, the sac is cut off outside the ligature, and its fundus stripped out entire. If, however, the sac is very large and closely adherent, the part which occupies the scrotum may be left in place, only removing that which comes through the canal. Any other foreign body, such as an accumulation of fat, must be removed.

In closure of the canal, the relations of the lower border of the internal oblique and transversalis muscles to the canal must be noticed.

They are then seen going just above the cord to their attachment to the pubic bone. The parts are reconstructed as follows: The cord being held up out of the way, a blunt curved needle, armed with kangaroo tendon, is passed through the lower borders of the internal oblique and transversalis muscles well up toward their attachment to Poupart's ligament. The needle is now carried under the cord and through Poupart's ligament. This suture when tied brings the borders of the muscles named closely around the cord at the upper angle of the wound, and the muscles are now brought in contact with Poupart's ligament all of the way down to the pubic bone by continuous suture. We now place the cord upon this new muscular posterior wall, which never existed before, and stitch the divided aponeurosis of the external oblique over it, the skin being closed over this. This differs from Bassini only in the suture material; he using silk instead of the buried animal tendon. But, as the latter proves fully as efficient and less liable to form a sinus, it is preferred by most American operators.

As a result of this operation there has been done:

1. Cleared the canal of the hernial sac and of any other foreign body that may have been found there.

2. Constructed a new posterior wall, by carrying two muscular layers back of the cord, which are not found there in the normal subject. The treatment of the case subsequent to the operation is usually very simple. All possible precautions to secure asepsis have been observed, and it is expected that primary union will result. After closing the skin by catgut, and dusting aristol over the parts, a good firm bandage is applied, and this is not disturbed for ten days, unless there is elevation of temperature, or pain, indicating that all is not going well with the healing process.

Dr. De Garmo reports 278 Bassini operations upon patients of all conditions and ages, without a dangerous symptom following any case. Of these there were seven recurrences; three were operated on subsequently and the special cause for recurrence removed.

Hence the author's answer to his query in the title of his paper is, "We have found a radical cure for inguinal hernia."

FISHER, LOUIS, NEW YORK: THE SIGNIFICANCE OF THE VARIOUS "STOOLS" OF INFANTS CHIEFLY DURING THE PERIOD OF LACTATION. (*The Clinical Recorder*, July, 1897.)

Stool. The stool of a nursling or a baby on an exclusive milk diet should be yellowish in color, smeary or pasty-like in consistency, and have an acid reaction. The smell should be faintly acid but not disagreeable. The color is due to bilirubin, and the reaction depends on the presence of lactic acid, the source of which is the milk-sugar. The only gases present are H and CO_2; according to Escherich H_2S and CH_4, to which the odor of adult stools is due, are not present. There are no peculiar albuminoids. Those existing in mother's milk seem to be entirely absorbed. Peptone exists in trifling amount. Sugar is not present. Pancreatic ferment is absent, and sometimes traces of pepsin have been found.

Mucus. Mucus is always present in considerable quantity, also columnar intestinal epithelium.

In the stools of nurslings large quantities of lactate of lime can be found, so also we frequently find oxalate of lime depending on the quantity of oxalate of lime ingested. Uffelmann has noted the presence of bilirubin crystals in the stools of nurslings, perfectly healthy children. Miller, who carefully studied the various micro-organisms in the mouth, found that most of them could again be found in the intestinal canal. He further found that certain germs possessed diastatic properties and were capable of producing lactic-acid fermentation. In the milk feces of nurslings Escherich found two germs; the one he called bacterium lactis aerogenes (or bacterium aceticum Baginsky) and the other the bacterium coli commune. In the meconium he found proteus vulgaris, streptococcus, coli gracilis, and bacillus subtilis.

Number of Stools. The number of stools during the first two weeks is from three to six daily; after the first month two stools daily is the average, many infants have one, others three stools daily; that is largely due to the excessive quantities of water given to infants. As soon as the exclusive milk diet is changed to the mixed diet we then lose the characteristic infantile stools and they resemble more those of an adult; though remaining softer and thinner throughout infancy, they become darker in color, assume the adult odor, and have more varieties of bacteria than those previously mentioned as found in the stool of a milk diet.

Reaction. Reaction of stools in diarrheal disease and in health is chiefly acid, next in frequency neutral, alkaline stools rare. Green grass stools usually acid, seen in early stage of dyspeptic diarrhea, color from a pale greenish yellow to grass green. Wegscheider has shown that the green color is the result of performed biliverdin. The condition in the intestine on which the transformation of bilirubin into biliverdin depends has been generally regarded as one of acid fermentation. Pfeiffer's experiments show this former opinion to be wrong. He found that none of the acids formed in such fermentation, lactic, acetic, butyric, propionic, etc., added to yellow stools outside the body turned them green, but made them deeper yellow. But dilute alkaline solutions added to fresh yellow stools turned them green after an exposure of thirty minutes to sixty minutes, and strong solutions turned them first brown, later after exposure to air intense green.

Typical green stools can be produced by giving an infant two or three grains of bicarbonate of soda. This I have tried dozens of times. The soda must be given for a few days. This explains Pfeiffer's alkaline theory.

Typical Green Stools. Typical green stools can also be produced by giving small or even large doses of calomel. If after having given bicarbonate of soda and produced green stools we give diluted hydrochloric acid in five- to ten-drop doses the yellow color will again reappear in a few days. This is also true of rheum. Stools which are pale yellow when discharged and which afterward become green are often seen in disease. They may themselves be neutral or alkaline in reaction. This latter

may, however, depend on the admixture of urine. An excess of bile may often cause very green stools.

Brown Stools. Brown stools may be due to changed biliary pigment and to drugs; that is, bismuth causes the well-known dark stool, so also tannic acid and all iron salts give the dark stools, which vary from a deep brown to a black color.

Blood from the stomach or small intestine frequently gives the stool a black color resembling tar. Thus a practical point is, the brighter the color of the blood the lower down near the rectum and anus must the pathological lesion be looked for; the darker the blood the higher up must the cause be found; for example, in the stomach, duodenum, jejunum, etc., if the stool contains black blood. If the corpuscular elements of the blood are wanting, then the presence of blood can only be positively diagnosticated by either a micro-chemical examination or by means of the spectroscope. The presence of red blood-corpuscles must always be regarded as a pathological factor.

A brown stool in an infant is frequently caused by a diet of animal food, or by a diet principally of broth. This stool has no distinct consistency nor reaction. In dyspeptic diarrhea or in some forms of entero-colitis we have very offensive stools, and they resemble muddy water; with the latter there is considerable flatus during each movement.

White or light gray stools usually are of a putty-like consistency, sometimes like dry balls on a diaper; sometimes they appear like ashes, usually very offensive, consisting principally of fat. In the latter there is scarcely a trace of bile, or it is even absent altogether.

Mucus is always present in all healthy stools, and is so well mixed with the stool that it does not appear as mucus to the naked eye. Any appearance therefore of mucus easily visible should be regarded as abnormal. Mucus is present in every form of intestinal disease: Very abundant in inflammatory conditions affecting the large intestine, more so than in those affections of the small intestine, and especially so in inflammatory conditions of the colon, both acute and chronic.

Jelly-like Masses. Jelly-like masses or shreds of mucus and where the stool consists chiefly of mucus show that the affection is confined to the lower portion of the colon, or that it is located

in the rectum. Long shreds of mucus frequently resembling false membrane are frequently found in catarrh of the large intestine. If the shreds of mucus are intimately mixed with the stool, then we must look for the lesion quite high up, and if it comes from the small intestine it is usually stained from bile. If the lesion is low down the mucus is not intimately mingled with the stool.

Dyspeptic Stools. The first change noticed in the dyspeptic stool is the increase of fat. Often the stool is quite green and contains small pieces of yellowish-white color, which vary in size from a pin-head to the size of an ordinary pea.

Hitherto from their color they were supposed to be casein lumps. Wegscheider has taught us that they consist principally of fat. Baginsky has shown that large colonies of bacteria are contained in the lumps of fat. Frequently they are so numerous that it looks as though the stool were composed only of these cheesy lumps. They can be easily differentiated from real casein lumps by their solubility in alcohol and ether.

Fat Diarrhea. Biedert and Demme have devoted considerable attention to this subject. In some children the feces showed 50 to 60 per cent. of fat, whereas the normal percentage in ordinary feces varies from 13.9 per cent. (which is the normal quantity) according to Uffelmann.

Casein is not nearly as common an ingredient of feces as is commonly supposed, as I have previously stated. Casein lumps can be seen in abundance in the course of diarrhea during an exclusive diet of milk.

Rachitis is usually first noticed by persistent constipation. This is encountered soon after birth, and from the history we hear that it is of long standing, due to an atonic condition of the muscles. Associated with rickets is usually a large, flabby abdomen, the so-called pendulous belly.

Escherich says: "If albuminous decomposition with very foul, offensive stools exist, these articles should be withheld from the diet and carbohydrates given—dextrine foods, sugars, and milk. If acid fermentation is present, with sour but not offensive stools, carbohydrates are to be withheld and albuminous foods given, such as animal broths, bouillon, peptones, etc. In the decomposition of milk, the sugar of milk and not the casein is usually broken up."

Proteids of Milk. The proteids of milk are so thoroughly absorbed that only small traces of them can be found in the feces. Normal milk feces contain large quantities of bacteria, but chiefly two kinds:

1. Bacterium lactis aerogenes (Escherich).

2. Bacterium coli commune; other germs, especially those of the protolytic type (those that render gelatine fluid), are not found under normal conditions. Albuminous decomposition and its products, tyrosin, indol, phenol, and skatol are not found in milk feces. But lactic acid, acetic acid, and formic acid, and other fatty acids are present, causing the acid reaction. V. Jaksch found a saccharine ferment in the feces of children. Baginsky found a peptonizing ferment. The amount of infant's feces varies, but it has been found that 100 grams of milk food will produce about 3 grams of feces, according to Baginsky. This is a vital point, but I have found it very difficult to determine, for in most cases the napkins of the infants are soiled with urine plus the feces, thus adding to the gross weight.

Guide for Value of an Infant's Food. The guide for the proper determination of the value of an infant's food consists in noting:

1. The child's increase in weight.

2. The proper assimilation of food by an inspection of the feces.

3. The absence of all gastro-enteric disturbances: (*a*) Vomiting; (*b*) diarrhea; (*c*) constipation; (*d*) colic or flatulence.

4. The child should go to sleep and appear satisfied after feeding.

STILL, GEO. F., LONDON, ENG.: ACUTE ABDOMINAL DISTENSION IN CHILDREN. (*Pediatrics*, Vol. IV, No. 6.)

The condition described is that of a rapid and often extreme distension of the abdomen, which supervenes usually in the course of a severe illness, and generally but not always shortly before death. Often there is no assignable cause, but generally it is secondary to diarrhea or gastro-enteritis. While it seems to be a part of the process of dying in some cases, it certainly hastens death in almost every case, and in some appears to be the actual determining cause of death. It frequently occurs as a complication of broncho-pneumonia, acute cerebro-spinal men-

ingitis, acute tuberculosis, and splenic anemia. Its onset is usually rapid, and occurs late in the disease. The stomach, small and large intestines may be independently affected. The treatment must be prompt and vigorous; raise head and shoulders of child; hypodermics of strychnia; ammonia and brandy are good; tapping colon by passing large rubber tube may do good in some cases.

McGraw, T. A., Detroit, Mich.: Pyloric Cancer. (*The Physician and Surgeon*, July, 1897.)

The chief object of the paper was an inquiry as to what has been done for relief of malignant disease of the stomach by operative procedures, and whether further efforts in this direction were warranted, as well as an indication in which way the operative technique could be improved upon. Comment is made upon the fact that most physicians look with disfavor on operative interference in malignant disease of the stomach, when they refer patients continually to be operated upon for malignant disease of the rectum and uterus.

To the Germans is due the credit of developing the operations on the plyorus for removal of malignant growths, but their reports show a very high rate of a mortality.

In order to expect any result from operative interference an early diagnosis is essential, and operators have concluded that no further advance can be made in the operative treatment of cancer of the stomach until the surgeons secure the cordial and hearty co-operation of the general profession. Dr. McGraw suggests that whenever an adult complains of an indigestion to which he has not been accustomed and which does not yield to treatment, and when no rational cause can be assigned for the malady, cancer should be at once thought of. Advanced age, pain, emaciation, hemorrhage, and a tendency to vomit undigested food is suggestive at once of obstruction at the pylorus. Dilatation of the stomach soon develops, and when fully dilated pulls the plyorus where it can be easily palpated. Absence of free hydrochloric acid and presence of lactic acid is very suggestive, and there is a loss of the motor power of the stomach.

Palliative operative treatment should never be resorted to when there is any hope of success by the radical operation of extirpation.

Book Reviews.

A Text-Book of Diseases of Women. By Charles B. Penrose, M. D., Professor of Gynecology in the University of Pennsylvania; Surgeon to the Gynecean Hospital, Philadelphia. Illustrated. W. B. Saunders: Philadelphia. 1897.

This book, in forty-three chapters, is, as the author says, written for the medical student, though for the general practitioner who occasionally does gyneco-surgery, or is so situated that at times he may be compelled to do this character of work, the volume will prove of inestimable value. Chapter I deals with the causes of diseases of women in a general way, and is followed by a chapter upon the methods of examination, which is very excellent indeed, giving many useful hints. Diseases of the external genitals occupy eleven pages, those of the vagina four. Chapter V gives in a plain, full, though not too exhaustive manner the essential anatomy of the perineum, and also the mechanism of the different parts, which is indispensable for a proper understanding of conditions resulting from tears of the pelvic floor. Injuries of the perineum are treated of in a most excellent manner, and the appreciation of their importance is shown by the length of the chapter, being, as it is, the most extensive in the work. We are glad to note this, as the tendency has been of late to devote too little space in text-books and too little time in lectures to the student, discussing this subject. When we consider the number of women suffering from lacerations to the vagina and perineum, as the results of labor, and especially as compared to those having other forms of pelvic trouble, all must agree with Dr. Penrose that its importance is certainly a great one. The subject, too, is handled in a masterly style; the explanation of the mechanism is clear, and the description of the technique of operating is such that it is most easily understood. Most descriptions, especially text-book ones, cause confusion rather than clearness of the manner and technique of these operations. In the succeeding chapters, IX, X, and XI, displacements of the uterus are considered. The pessary is given its proper place in the treatment of displacements, a

thing which in the furor for operating has been overlooked. We agree with the author, that they undoubtedly have a place and can afford much relief. The operations for fixation of the uterus are cast aside for "ventro-suspension." This operation is described in detail, as is Dr. Alexander's operation for shortening the round ligaments, which two, the author says, "have deservedly met with the greatest favor."

Five chapters are given diseases of the cervix, including cancer, the pathology and symptoms and indications for treatment being discussed. The technique of hysterectomy is left for a subsequent chapter.

Seven chapters are devoted to diseases of the body of the uterus, and a comprehensive consideration given. The treatment of malignant tumors is indicated in the one word, hysterectomy, which the author also unqualifiedly indorses as the best plan of treatment for fibroids when operative measures are indicated. Drugs, local treatment by electricity, etc., are justly ignored.

Tubal and ovarian disease, including ovarian cysts and tubal pregnancy, are the subjects of the next nine chapters. Following are Malformations of the Genital Organs, Disorders of Menstruation, Menopause, and Genital Fistula. The bladder and urethra receive their share of consideration, and after this comes a chapter on gonorrhea in women, which the author has given a great deal of study, with the result that it would repay the specialist to read these pages.

The work is concluded with the technique of operations and the treatment after celiotomy and the result of removal of the appendages. From one of these last chapters we quote the following, which should be impressed upon every student of medicine and remembered by every practitioner and every aspirant in abdominal surgery:

"The operator should be especially trained for the work. He should be trained by work upon the cadaver and lower animals, and by watching and assisting experienced operators. (Except in cases of emergency he should not perform these operations unless he expects to do so continuously.) He should be prepared to deal without hesitation with every pathological condition that may be met with in the abdomen; a glance at works

on abdominal surgery will show how numerous such conditions are."

The above might form a "frontice-sheet," as it were, in all works upon abdominal surgery to serve as a warning to some unworthy aspirants in this domain. Taking it all in all, this is in our opinion one of the best works upon this subject that has appeared, and Mr. Saunders may feel justly proud of having the work issued from his press. Dr. Penrose is so well known, as also his research and ability, that any thing from his pen would be expected to be of the highest order of excellence. Illustrations are abundant and pertinent to the subject-matter. The publisher deserves credit for the excellent typographical work, binding, paper, and painstaking work which is manifest in the production of the illustrations. LOUIS FRANK.

The Disorders of Digestion in Infancy and Childhood. By W. Soltau Fenwick, M. D., B. S., Lond., Member of the Royal College of Physicians; Physician to the Out-patients at the Evilina Hospital for Sick Children. With illustrations. London: H. K. Lewis. Philadelphia: J. B. Lippincott Co. 1897. Price, $3.50.

The author, as attending physician to the Evilina Hospital, has been afforded abundant material for observation in this special field of children's diseases, and as Research Scholar to the British Medical Association he has followed up his clinical investigations with pathological work in the same line. He has written a most instructive and entertaining book of three hundred and seventy-seven pages, it being fully up to date and in line with the results of our own investigators.

Dr. Fenwick recognizes too the lack of unanimity on the part of writers on this subject of a uniform nomenclature, and his classification has the virtue of simplicity, and there are few troubles but can be made to fit in with such as he has given.

"The pernicious habit of designating a disease according to its principal symptom has led to the inclusion of a large number of distinct complaints accompanied by a loose state of the bowels under the term of 'diarrhea,' the significance of which is still further confused by such additional qualifications as 'simple,' 'inflammatory,' 'zymotic,' etc. In order to avoid the employment of a term which is only productive of error I propose to consider the various acute diseases of the digestive tract associated

with catarrhal inflammation of its mucous membrane under the single term of 'acute gastro-intestinal catarrh,' pointing out, as far as our present knowledge will permit, the pathological and clinical distinctions which exist between the different members of the series." Thus he describes under separate heads "acute and chronic gastro-intestinal catarrh," "acute and chronic gastric catarrh," "ulceration of the stomach," and the "dyspeptic conditions." He does not describe the condition alluded to by most authors as ileo-colitis and colitis, as he states that these conditions never exist without perceptible change in the stomach, though there may not have been any symptoms pointing to this organ.

The first chapter is given up to a description of the anatomy and physiology of the stomach, in which he gives the result of some original investigations upon the chemistry of digestion in infants fed upon breast milk, cow's milk, and farinaceous foods. He states that "the introduction of milk into the stomach at once excites the secretion of gastric juice, which is poured out in quantities that have a direct relation to the size of the meal. Each successive atom of free acid which makes its appearance is immediately seized upon by the proteid elements of the food and fixed by them in the form of a chemical combination. This offers an explanation of the apparent absence of free hydrochloric acid until the end of digestion. It is well known that free hydrochloric acid exerts an inhibitive action upon the growth of micro-organisms when it exists in quantities greater than 0.17 per cent. In infancy an excess of free acid is rarely observed, and consequently any bacteria which may gain an accidental entrance to the stomach with the food are enabled to flourish without restraint. This probably explains the extreme susceptibility of young infants to gastro-intestinal infection." His observations as to the motor activity of the stomach correspond with the findings of other observers, that it depends on the character of the food ingested being retained by the stomach longer with cow's milk than mother's. No original investigations were made as to the bacteriology of the intestinal tract or stomach. He does not believe in the efficacy of galactogogues. As to the variations of the various ingredients of milk he states that fat is the least constant, which is in accord with established views.

The chapter on Diet in Infancy contains many practical and important points. The insistence that no food is needed pending the first appearance of the milk in the breasts, the manner of nursing at the breast, duration of nursing, etc., are all important points, and not generally attended to by physicians. The record of weights and the proper gain during the first six months varies but little from the observations made by Holt in some ten thousand records, but from that point until the twelfth month Holt's weights are much less. We think that the recommendation that "the infant should not be permanently weaned unless the milk is found to continue to disagree after a careful trial if the mother is pregnant," should not be accepted.

The author differs from Rotch in his statement that plain water is as good a diluent for milk as we have, and recommends barley-water, "as it appears to aid nutrition by the aid of the minute quantity of farinaceous material that it contains."

The record of the author's investigations of the chemistry of digestion in three cases of acute dyspeptic condition is of great interest, the most important findings being a diminution in the secretion of hydrochloric acid and the production of organic acids by fermentation of the food. In the treatment of this condition emphasis is properly placed upon the pernicious habit of nurses of tossing babies about in their arms as a quieting and soothing procedure. In this country it has not been found that as a routine measure emetics are to be preferred to lavage when it is desirable to empty the stomach of its contents, even in the acute form of this trouble, for the history will generally show that there has been continued emesis to a greater or less degree which will be relieved in almost every instance by stomach washing. It is to be regretted, too, that soap and water is recommended for an enema when that is indicated. Soap always acts as an irritant to the rectal mucosa.

In considering the morbid anatomy of the bowel in acute gastro-intestinal catarrh it is stated that the gelatinous condition of the mucosa is caused by the autodigestion of the tissues after death, the hydrochloric acid and peptic ferment being the cause described by most observers, but the author believes that it is due to the presence of pepsin in combination with acetic acid.

In recording the *post-mortem* findings no stress is laid upon

the absence of the superficial layers of epithelium from the mucous lining of the small intestine, as they are easily displaced in the preparation of the specimen and occur as a result of *post-mortem* changes.

We are pleased to note how favorably *gavage* is spoken of in the treatment of acute and chronic gastro-intestinal catarrhs.

A point the author has made, which we think exceedingly well taken, is that he discards the usual custom of enumerating the various drugs which have been found of use in the treatment of the complaint and confines himself to a brief description of the chief indications for the employment of medicinal remedies at different stages of the disease, as there is a teaching that directs all the attention to the diarrhea, while it ignores the disease of which it is merely a symptom, and includes under the absurd title of "diarrhea" a number of distinct diseases, each of which requires a distinct treatment.

As to intestinal antisepsis, he states that the first step toward this is the expulsion of all fermenting materials upon which the bacteria thrive and to allay the inflammatory process which has been excited, and secondly to administer such drugs or combinations of drugs which possess the power of inhibiting bacterial growth in stomach and intestine. He states that there is a difference between the theory and practice of gastro-intestinal antisepsis, that the intestine is something more than a test-tube, that it is endowed with a power of absorbing not only the products of the bacteria, but also most of the substances that are introduced to destroy them, their composition being also altered by the secretions that are poured into the intestine, converting a comparatively innocuous drug into a poisonous one. Bismuth is given a prominent place among the antiseptics recommended. We believe that the author has made a mistake in advising that opium be added to the bismuth or other diarrheal mixture when indicated. When the former drug is given it should always, in our opinion, be given separately, and never, as recommended, with other drugs.

Stress is laid in several places in the book upon the evils that result from neglect of apparently simple affections of the gastro-intestinal tract; and if this lesson is learned by the readers of the work and the fact impressed upon the laity by them the author's

work will be well repaid. The frequency of chronic gastro-intestinal catarrh occurring after the exanthemata is another argument against the superstition held by the laity that children should be exposed to the contagion of these diseases in order to have them while they are young.

The investigations of the author lead him to the conclusion that parenchymatous inflammation of the kidney does not occur as often as a complication of the chronic forms of inflammation of the gastro-intestinal tract as is taught by other observers. That it does occur very frequently we are firmly convinced, and this would be ascertained more often if a more systematic examination of the urine was made in all cases of illness among children.

Astringents in the treatment of chronic gastro-intestinal catarrh are given no place by the author, as he states that "he has never seen a case cured by astringents in which a careful trial of antiseptics and sedatives had previously failed."

We think that sufficient stress is not laid upon the importance of irrigation of the colon as a therapeutic measure, it being dismissed with half a page, though it is recommended in that small space as being oftentimes very efficacious.

In the remainder of the book due attention is paid the gastric catarrhs, weak digestion in infants, ulceration of the stomach, the dyspepsia of strumous children, paroxysmal hyperacidity, and a very valuable appendix, in which is given a full description of the methods of chemical examination of the contents of the stomach, quantitative analyses, etc., selected recipes and prescriptions, among the latter being given the formulæ for the modification of milk by the Rotch method.

The book is an admirable one in every particular, is attractively gotten up, on excellent paper, with large type. It is one of the most complete treatises on the subject that we have seen, and evidences much thought and work.

Surgical Hints. By Howard Lilienthal, M. D. New York: International Journal of Surgery Co.

The clear print on good paper of this little book is in keeping with the soundness of most of the "hints." There is no pretense of completeness, the author having struck here and there as the thought occurred to him. The chief value, then,

consists in the terse deductions drawn from personal, practical clinical experience.

It is well urged that the most trusted assistant should be the one selected to give the anesthetic. The recommendation to pour vinegar upon the mask after operations under chloroform has shown itself distinctly worth while. The after-sickness is thereby much if not entirely relieved, and one of the most disagreeable features of the post-operative period is done away with. It is extremely well urged that general anesthesia is too often employed when local anesthesia would be all sufficient for the purpose.

It is common experience that the microscopist can not formulate from his examination an absolute rule for the guidance of the surgeon in his treatment of tumors. The clinical aspect and course of a tumor are better guides than the microscopical finding; this last is chiefly important as contributory evidence.

The recommendation never to operate for chronic tumor without having tried antisyphilitic treatment for at least a week is good advice, though it would seem the time suggested is hardly extended enough.

In fractures of the hip in aged persons the author rightly lays stress on the fact that it is the patient and not the fracture which requires careful watching and nursing. Many of such fractures are impacted to start with, and careful and very gentle handling is necessary to prevent destruction of this fortunate condition. Ligamentous rather than bony union is to be expected in any case, and the frequent shifting of the patient's position does little prejudice to the prospect of such union. If possible a bed should be employed which permits shifting the body weight and planes without disturbing the fractured hip. The fracture-box should be made to accompany the curved bistoury, which the author has already relegated to the past.

That the pulse is the safer guide in appendicitis, and that many cases run to a fatal termination with very little or no elevation of temperature can not be too strongly emphasized. The cases most urgently in need of operative relief are those with a stationary or even a falling temperature, but with an increasing rapidity of pulse.

¶ All in all, the little book well repays perusal, and is solid enough to be more than a surgical trifle. JAMES B. BULLITT.

The Menopause. By ANDREW F. CURRIER, A. B., M. D., New York City. New York: D. Appleton & Co. 1897.

The scope of this work is "a consideration of the phenomena which occur to women at the close of the child-bearing period, with incidental allusions to their relationship to menstruation. Also a particular consideration of the premature—especially the artificial—menopause." According to the author it has been fifteen years since an original work on the menopause in the English language has appeared. The author's chief object in writing the book before us is to controvert the tradition which has been handed down to both profession and laity, that "the menopause is an experience fraught with peril and difficulty. This the writer declares to be incorrect and unwarrantable in the light of his own experience and observation.

The book is a very entertaining one, and the opinion of the author expressed in his preface is well sustained by the arguments and statistics used. They are summed up in the following sentence: "The author believes that the majority of women will not require to have any thing done by a physician during this period, reaffirming a proposition already enunciated, that a process through which every mature woman has to pass can not be expected to have abnormities in all or even in the majority of cases."

The arrangement of the text is, we think, in very poor taste, the various paragraphs being headed by an italicized sentence giving a summary of the paragraph which is to follow. In some instances only a few lines follow these headings, and the reader is much disturbed by the connection being thus interrupted so often and by the thought that this summary is an insinuation upon his ability to thoroughly grasp the idea advanced in that particular sentence. If these headings had been limited to the table of contents, where they are also reproduced, all would have been well.

Care of the Sick-Room.

Mrs. Burton Kingsland, writing of "When Nursing the Sick," in the September Ladies' Home Journal, insists that "a tranquil mind is of the utmost importance to the patient, and consequently every thing must seem to be moving smoothly and

easily, no matter what difficulties the nurse may have to encounter. The invalid should not be allowed to feel any responsibility whatever about his own case. The sick-room should be kept scrupulously neat, and made as cheerful and attractive as possible, that the eyes of the patient may rest with pleasure on his surroundings. The nurse herself may contribute to the agreeable environment if her own dress be simple and tasteful, and, above all, conspicuously neat. All soiled dishes should be removed immediately after being used, and no food kept in sight. Even the medicine bottles need not be obtrusively in evidence.

"Stillness has in itself a power to soothe, and, as all know, when the nerves are quiet nature's healing processes go on without impediment. Creaking shoes, rustling of garments, the rattling of dishes, and kindred noises are often the occasion of positive suffering to an invalid. To accidentally jar the bed, to spill the medicine when administering it, to close a door noisily, to 'sleep audibly' are cases where 'a small unkindness is a great offense' in the hypersensitive condition of the nerves of the patient."

Tuberculosis of the Genito-Urinary Organs, Male and Female. By N. SENN, M. D., Ph. D., LL. D., Professor of Practice, Surgery, and Clinical Surgery, Rush Medical College; Attending Surgeon to Presbyterian Hospital, Surgeon-in-Chief St. Joseph's Hospital, Chicago. Philadelphia: W. B. Saunders, publisher. Price, $3,00 net.

It is both timely and proper that a work should be issued on this most important subject. There is no one better prepared for the task than Professor Senn. With his large clinical observation to draw from, aided by a mind rich with pathological research, he has given to the profession a book of much value. By its careful study grave errors will be averted and much knowledge gained. Outside of the rational treatment that can be given this unfortunate class in a local way, the power to prevent a general infection is made practicable. The old idea that tuberculosis was confined to the lungs having been dissipated, it now becomes the duty of the physician to detect its ravages in other parts. This work of Senn's will enable one not only to detect but to treat this formidable disease when met with in the genito-urinary organs.

Intestinal Intoxication in Infants. By F. W. Forbes Ross, M. D., Clinical Assistant, Children's Hospital, Paddington Green, London, W. London: The Rebman Publishing Co., Ltd., 11 Adam Street, Strand, W. C. 1897.

A titular explanation is given as follows: "An attempt to systematize treatment of functional derangement of the infantile alimentary canal, due to septic or other causes, by rational combination of bactericidal with other therapeutic methods."

The book, of one hundred and thirty-eight pages, is a very interesting one and instructive. The author has ingeniously traced out the causes of diarrhea and constipation as due to septic conditions of the alimentary tract, but emphasis is laid through the work upon the importance of not devoting attention entirely to the treatment of septic conditions purely and simply to the exclusion of other and equally useful therapeutic measures. Stress is laid also upon the fallacy of considering lesions of the various portions of the alimentary tract as separate and distinct, stating that "seldom if ever has a particular affection of an individual organ existed without intercurrent derangement of organs directly or indirectly connected."

Classification of ailments from a septic standpoint is given as follows: simple non-inflammatory diarrhea, acute inflammatory diarrhea, and choleraic diarrhea, all of these divisions generally being included under the term infantile diarrhea. True cholera infantum is regarded as a result of a heat stroke.

The oidium albicans is considered a potent cause of gastro-intestinal catarrh.

Attention is called to the various elements to be considered in the treatment of diarrhea, that septic absorption results from the non-removal of the contents of the bowel, that it is not the frequency of the evacuations which indicate the true condition of the infant, but the evil factor consists of the painful contraction and irritation of a highly receptive and sensitive reflex system, loss of fluid, and deranged vaso-motor mechanism, and it is this which must be treated. A proper conception of this is essential before opium can be intelligently administered.

It is stated that the biliary secretion in an infant is of greater value in the processes of infantile digestion than in the adult—the green coloration of the stools is believed by the author to be due, not to bacterial action, but to chemico-bilious causes.

Chapter XI contains some very interesting points in connection with the "Sanitary-surroundings of Infantile Feeding in Health and Disease," in which the various sources of infection of milk are considered, its proper handling, etc., from the cow to the consumer. As to the iniquitous rubber tube connection to feeding bottles, the author says "the first and foremost offender of all, words are not yet coined with which to describe its lethal functions."

Under the head of Gastric and Intestinal Antiseptic Drugs are mentioned "resorcin, carbolic acid, salicylate of quinine, salicylate of soda, hydrochloric acid, and perchloride of mercury," with stress being laid upon them in the order named, and the following insoluble antiseptics, acting on the intestinal tract direct, these being decomposed into two or more derivatives, "salicylate of bismuth, benzol-naphthol, salol, naphtholin, iodoform, naphthol." The subnitrate of bismuth the author has discarded for the ammonia citrate of bismuth, when that drug is used at all. It is stated that the intestinal canal and a sinus are analogous, and the treatment essentially similar, *asepsis, drainage, freedom from irritation, rest.* Asepsis he divides into *general,* such as care of the milk, etc., and *asepsis of the canal proper.*

Following this come chapters on treatment in gastric catarrh, enteritis, simple and inflammatory catarrh, chronic diarrhea, with or without secondary ulceration; dysentery and ulceration of the rectum and colon; infantile atrophy and constipation; tubercular and typhoid ulceration, and a concluding chapter or appendix in which are given a multitude of formulæ and directions in regard to foods and their preparation. The book is a highly interesting and instructive one, and merits a large circulation.

The Diseases of Women. A Hand-Book for Students and Practitioners. By J. Bland Sutton, F. R. C. S., Eng., and Arthur E. Giles, M. D., B. Sc., Lond., F. R. C. S., Edin. With one hundred and fifteen illustrations. Philadelphia: W. B. Saunders. 1897. London: Rebman Publishing Co., Ltd, 11 Adam Street, Strand.

The names of Drs. Sutton and Giles on the title-page of any work would be sufficient indorsement that it would be well worth the reading, and this little book, though intended first for students preparing for examination, and as a reference book afterward as practitioners, will prove serviceable to others.

The text throughout is terse, yet sufficiently lucid for all practical purposes, and the illustrations are uniformly excellent. We commend it as being one of the best of its kind.

The American Academy of Railway Surgeons. Report of the Third Annual Meeting, held at Chicago, Ill., Sept. 23, 24, and 25, 1896. Edited by R. HARVEY REED, M. D., Columbus, O. Chicago: American Medical Association Press. 1897.

This volume is the third issued by the Association, and contains papers of timely interest. The editor has done his work well, and the execution of the book is such as we would expect to have from the "Journal Press"—excellent in every detail.

Principles of Medicine; Designed for Use as a Text-Book in Medical Colleges and for Consideration by Practitioners Generally. By CHARLES S. MACK, M. D., Professor of Materia Medica and Therapeutics in the Hahnemann Medical College and Hospital, Chicago, Ills. Chicago: W. T. Keener Co. 1897.

MATHEWS' QUARTERLY Special to Denver!

New Journals.

The Georgia Journal of Medicine and Surgery is the latest addition to our exchange table. It is edited by Drs. St. J. B. Graham, D. E. Dudley, and W. E. Fitch, all of Savannah. The Journal will be primarily a State and local journal, but with the first number to judge from we think it will occupy a place abroad as well as at home from the varied and general contents. We wish the new comer all success.

The first number of the Western Medical and Surgical Gazette will be issued on October 1st, from Denver, Colorado. It will be a monthly journal, and edited by Drs. William N. Beggs and Lincoln Mussey. Each issue will contain not less than seventy-two pages of reading matter. The corps of department editors and collaborators are well chosen, and the journal should be a success.

The Medical and Surgical Bulletin is the title of a journal the first number of which was issued the first of August. It is the official organ of the Alumni Association of the Medical Department of the University of Nashville, and is edited by Dr. M. C. McGannon, the business manager being Dr. Paul Clements.

The Pittsburg Medical Review with the mid-summer number became the Pennsylvania Medical Journal. It is the official organ of the Medical Society of the State of Pennsylvania, and as such will prove a valuable periodical.

The Daily Lancet is now published by the Bailey & Fairchild Company, its general character being changed to conform more closely to the newspaper idea. It will be edited by Dr. Joseph F. Edwards, of Atlantic City, N. J.

Notes and Queries.

THE American Pediatric Society is making a Collective Investigation of Infantile Scurvy as occurring in North America, and earnestly requests the co-operation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases.

[Signed] J. P. CROZER GRIFFITH, M. D., *Chairman*,
123 S. 18th Street, Philadelphia.
WILLIAM D. BOOKER, M. D.,
853 Park Ave., Baltimore.
CHARLES G. JENNINGS, M. D.,
457 Jefferson Ave., Detroit.
AUGUSTUS CAILLE, M. D.,
753 Madison Ave., New York City.
J. LOVETT MORSE, M. D.,
317 Marlboro Street, Boston.
Committee.

COMPETITION FOR THE SENN MEDAL.—Pursuant to a resolution adopted by the Section of Surgery and Anatomy of the American Medical Association, June 4, 1897, I have been appointed by the chairman, Dr. Reginald H. Sayre, as Chairman of the Committee charged with the awarding of the Senn Medal for 1898. The other members of the committee are Drs. H. O. Walker, of Detroit, Mich., and S. H. Weeks, of Portland, Maine.

1. A gold medal of suitable design is to be conferred upon the member of the American Medical Association who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award shall be made under the following conditions: (*a*) The name of the author of each competing essay shall be inclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of

the successful essay and the motto or device to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. (*b*) All successful essays become the property of the Association. (*c*) The medal shall be conferred, and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Association. (*d*) The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. (*e*) The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1898.

Competitors will address their essays to the undersigned.

J. McFadden Gaston, M. D., *Chairman*,
1½ Edgewood Ave., Atlanta, Ga.

We are in receipt of the Annual Announcement of the Northwestern University Woman's Medical School, from the corresponding secretary, Dr. John Ridlon, in which is indicated many changes which have been made in the personnel of the faculty.

A feature of the University is the view held by them, that "to obtain teachers in medicine, as in other departments, salaries commensurate with the work done must be paid."

This plan of education, the University idea, is certainly the plan of the present time, and we are pleased to note its adoption by this school.

The Medical Gazette Publishing Co., of Cleveland, Ohio, announces a small volume soon to be issued with the title "About Children." The author is Dr. Samuel W. Kelley, of the Cleveland College of Physicians and Surgeons. The book will contain six lectures filled with information for nurses, medical practitioners, students, and all who have the care of children.

Removed.—Dr. A. Ernest Gallant, the New York correspondent for the Quarterly, has removed his office from 10 West Thirty-sixth Street to 60 West Fifty-sixth Street, New York City, with office hours from 11 to 1, and 5 to 6.

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